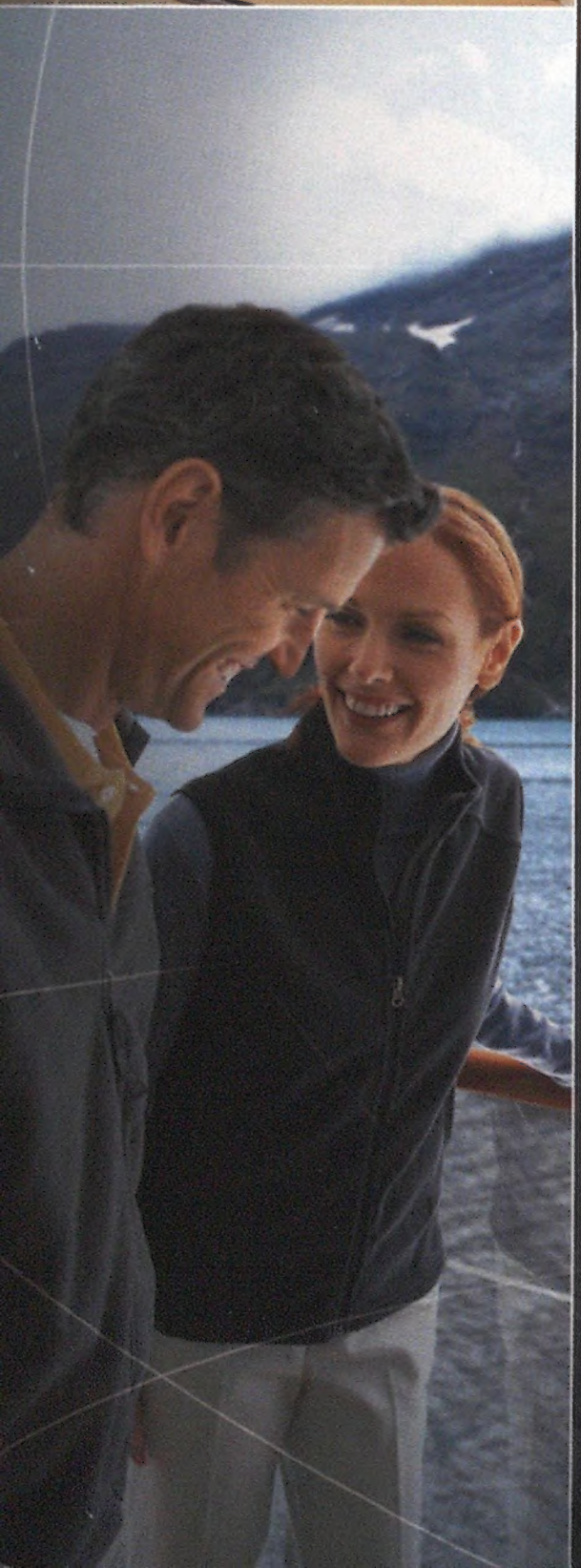
Smithsonian

JANUARY 2003

A Fresh Look at the Great Depression

Alexander Hamilton Goes to War
Nova Scotia Centenarians—Is it the Water?
Kofi Annan: Cool Hand at the U.N.
Tracking Drug Smugglers, Indian Style
Dubrovnik: Europe's Best-Kept Secret



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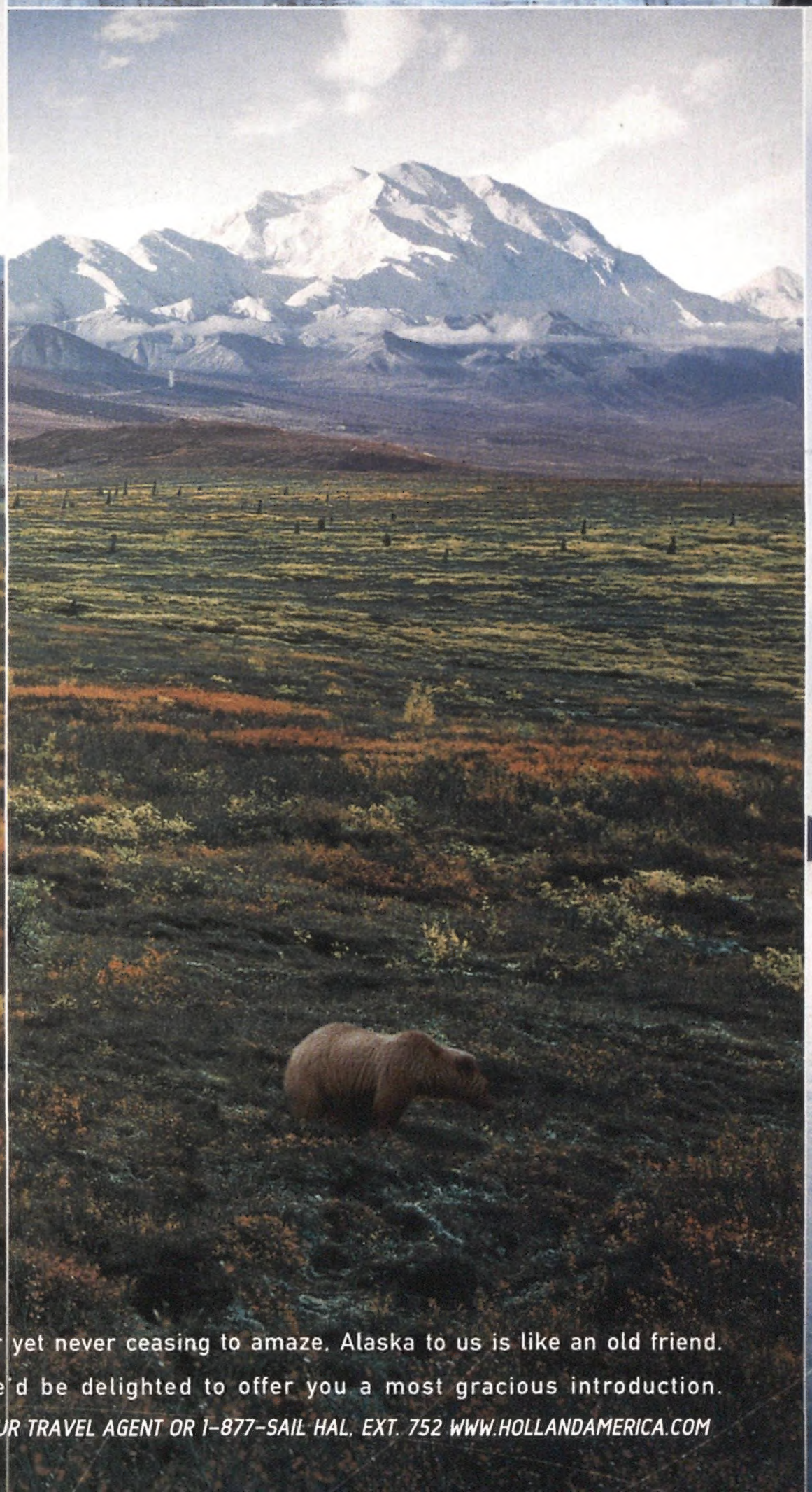

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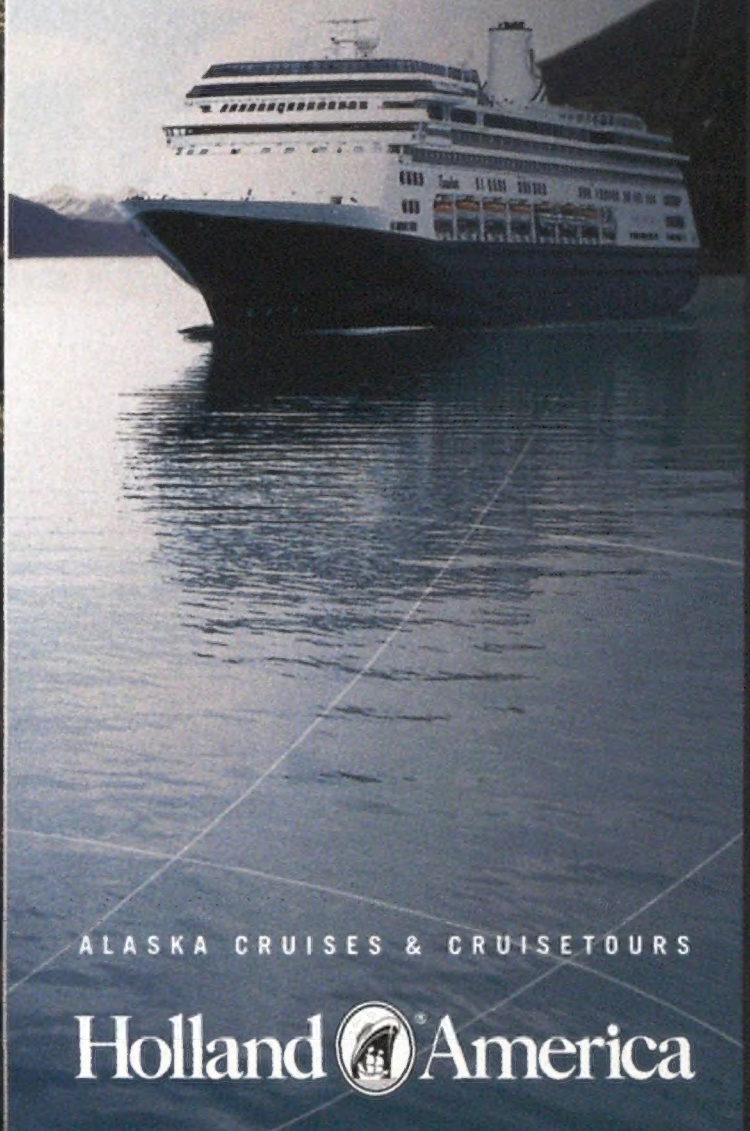

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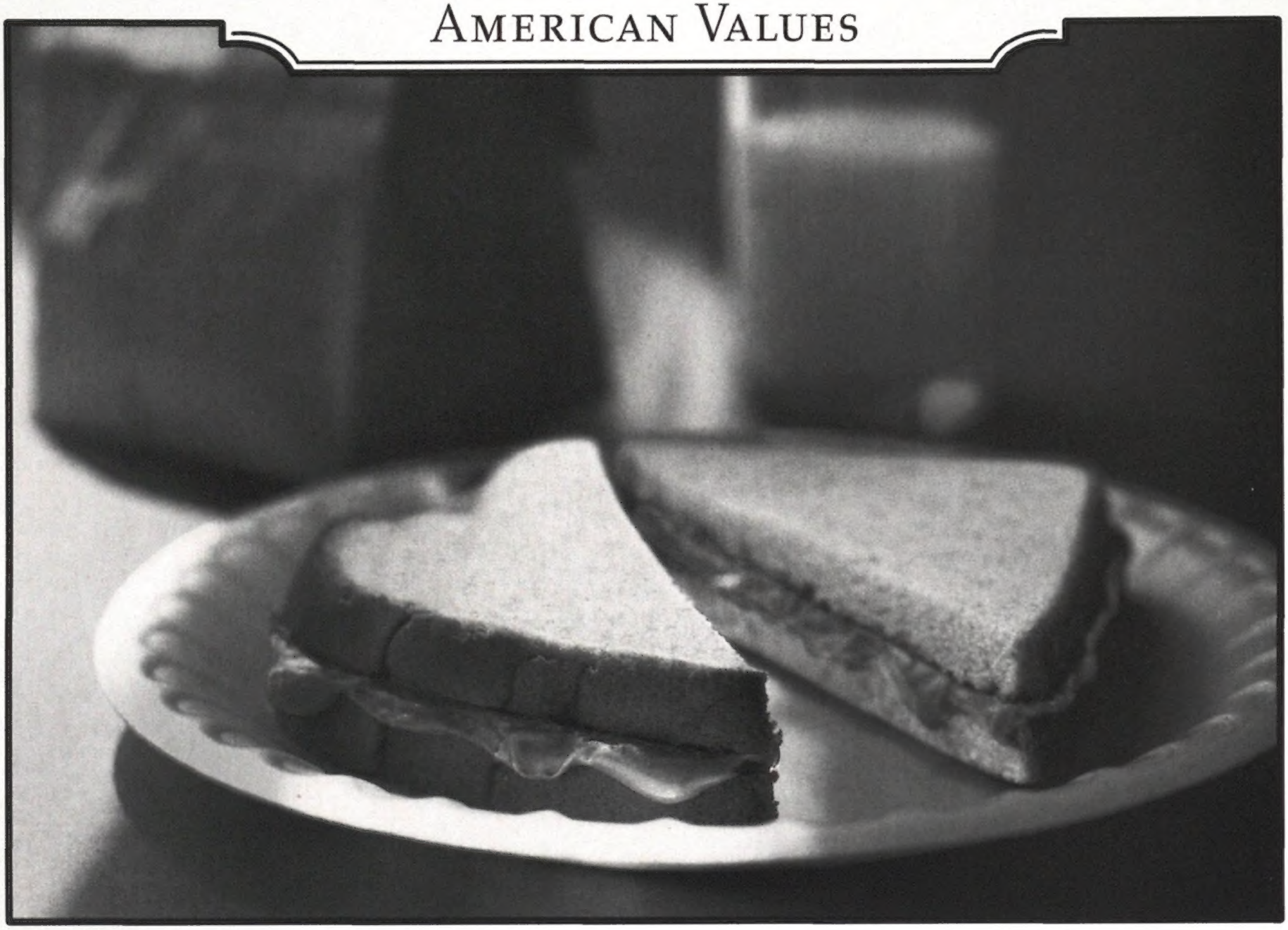

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DON EMMERT / AFP / CORBIS; GERRY GROPP; MICHEAL MCLAUGHLIN; ENRICO FERORELLI

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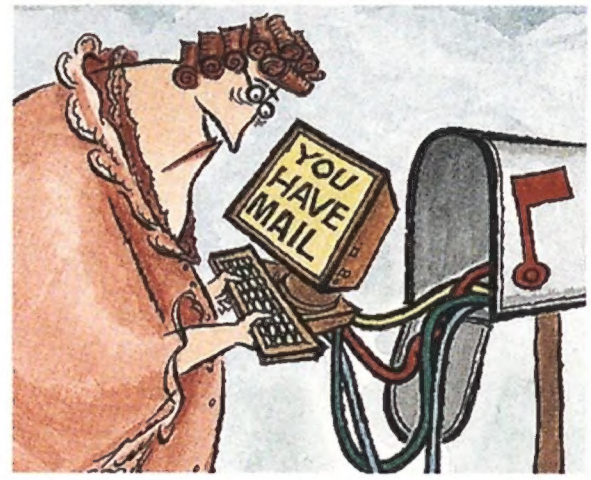

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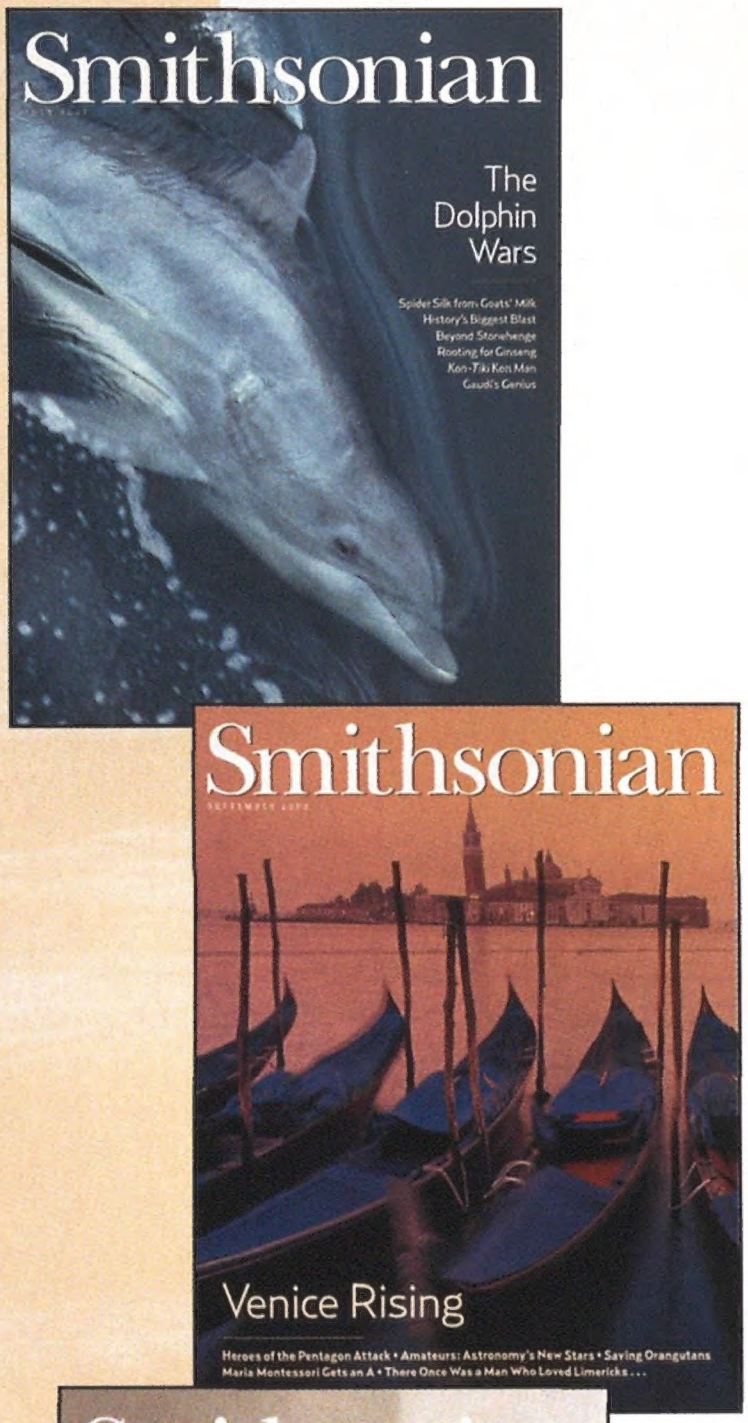

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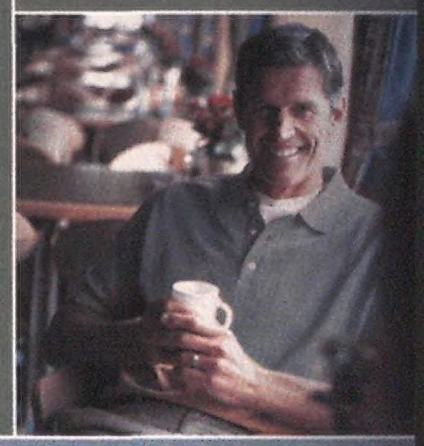

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* *Ex-Officio*

Back to the Future

SMITHSONIAN *returns to its classic design roots*

BY CAREY WINFREY

AS YOU PAGE THROUGH this issue, you may notice a few changes in the magazine's appearance, as we invoke the spirit of SMITHSONIAN's founding designer, Bradbury Thompson, and reinterpret the elegant, uncluttered design he established more than three decades ago. The new old look reflects the sensibility of our new art director, Brian Noyes, who joined the magazine this past September.

Noyes, who was born into a California newspaper family (his father worked at a succession of editorial and advertising positions at the *Monterey Peninsula Herald*), comes to us from the *Washington Post*, where he served seven years—in two stints—as the art director of the newspaper's Sunday magazine. He has also directed the designs of *House & Garden*, *Architecture* and *Preservation*, which won a National Magazine Award for General Excellence on his watch. "I am a fan of classic, clean typography," Noyes says. "I let the story and photography speak for themselves." (His work is featured this month, along with that of three other graphic designers, in a Meredith College gallery show in Raleigh, North Carolina.)

Art Director Noyes: "It just grabs me."

He is also a fan, and a collector, of American primitive and folk art, some of which, I'm happy to say, now graces our downtown Washington, D.C. offices. (As a result, Noyes' lair has become a popular hangout.) "It just grabs me," he says of the "basic, back-to-roots" objects—including a plaster bust of Elvis—that brighten our otherwise all-too-functional interiors. "It's just this quick, fresh take on whatever pops into the artist's head."

REPORTING OUR STORY about Indian U.S. Customs patrol officers who intercept marijuana smugglers coming across the border from Mexico into Arizona ("Shadow Wolves," p. 40), author Mark Wheeler found himself in a Customs van parked alongside a road frequented by the bad guys. After he waited 30 minutes, during which three trucks with headlights off (presumably filled with illegal immigrants) passed by, a fourth vehicle, a new SUV (which smugglers favor) approached, also with its lights out. When Shadow Wolf Curtis Heim turned on his headlights, the driver made a hasty U-turn and gunned the SUV in the direction of the border. Heim gave chase until the fleeing vehicle drove off the road and crashed. Though the two smugglers got away, Heim confiscated about 500 pounds of marijuana. Says Wheeler: "Afterward the guys were teasing me. Heim said I left a crease in his seat because I had my butt clenched so tightly."

BRIAN SMALE

Big Digs

With several major construction projects under way, the Smithsonian Institution is committing more resources than ever before to expanding its exhibition spaces

THE CRANES you may see against the sky these days in Washington, D.C. have engines, not wings, but they're a beautiful sight nonetheless. The machines are evidence of a building boom that's taking the physical grandeur of the nation's capital to a higher level still. Though most of the construction is commercial, cultural institutions, the Smithsonian among them, are responsible for some $2 billion worth of it. That investment should be a cause for celebration by Americans throughout the country, who rightly think of Washington—not turbulent, political Washington but the Washington of patriotic pilgrimage, the great urban site of monuments and museums—as their city.

The Smithsonian is committing more than $1 billion to the renewal and physical expansion of the exhibition spaces of its museums and the National Zoo—a more ambitious construction agenda than any museum organization has ever undertaken. Best of all, the projects are focused entirely on enhancing the capacity of the Institution to exhibit its collections and better serve the public. I've written of several of these projects before, but it's hard to contain enthusiasm for them as they advance or near completion. Later this year, for example, the denizens of the new $31 million hall of mammals in the National Museum of Natural History will make their public debut. Not long thereafter, in December, the main building of the Steven F. Udvar-Hazy Center, a $311 million companion to the National Air and Space Museum, will open on a 176-acre site adjacent to Dulles Airport. It's almost impossible to convey in words the steel-trussed splendor of the building, which extends for 984 unobstructed interior feet, the length of three football fields, and soars ten stories high. The structure should coax an "Awesome!" from even the most unflappable visitor.

Though the new, $219 million National Museum of the American Indian on the Mall won't open until 2004, there's already an on-site visitors' center with models of the finished exterior and interior and a close-up view of the adjacent construction site. The undulating facade of Kasota stone and glass will distinguish the museum from any other Washington building, as will a landscape adorned with a wetlands area, native plants, and rocks bathed by a waterfall.

For the National Museum of American History, which dates from the 1960s, and the landmark Old Patent Office Building, which dates in its oldest portions from the 1830s and is now home to the National Portrait Gallery and the Smithsonian American Art Museum, we intend not mere renovation—although that will occur and be meticulous and comprehensive—but reconfiguration to suit the museums' missions in the 21st century. The cost of the two projects could exceed $400 million. The Old Patent Office Building will gain a new auditorium below ground and a roof of glass above its central courtyard, and its full interior will be reclaimed by the Portrait Gallery and the American Art Museum for exhibition space and public use. Though plans for

The Udvar-Hazy Center's ten-story hangar will house an exhibit of more than 300 air- and spacecraft.

REGIS LEBEURE (1)

the American History Museum are still under discussion, their intent is clear. They call for developing a spectacular central hall at the core of the building, where the Star-Spangled Banner will be displayed at the heart of the museum. The current dim and bewildering interior will be reconfigured to let in natural light and improve visitor orientation and to increase exhibition spaces, which will feature a series of new displays, including a sweeping introductory account of our nation's history.

A half-dozen other cultural institutions in Washington are dedicating to construction a sum that even by the roughest tally exceeds $1 billion. The Corcoran Gallery of Art, near the White House, plans a swoopy, shimmering addition designed by Frank Gehry. The Newseum is to relocate from Virginia to an architecturally adventurous new building on Pennsylvania Avenue, right across from the National Gallery of Art, which recently opened an elegant expanse of new sculpture galleries. The Phillips Collection is adding space for exhibitions, a new auditorium, and a center for studies in modern art. The one-of-a-kind International Spy Museum is already drawing crowds to a revitalized section of downtown Washington. The Kennedy Center plans to spend some $250 million on new buildings, including a museum of the performing arts, which is likely to feature many objects from the Smithsonian's collections.

Of course, there's more to the foundations of all these new cultural buildings in the capital than the steel and concrete that support their physical mass. They're sustained as well by certain steady human needs: to know; to understand; to hope; to be gratified, cautioned and inspired. In this anxious and unsettled time, each is a gesture of reassurance and a bold wager on the future.

Lawrence M. Small

SECRETARY OF THE SMITHSONIAN INSTITUTION

Demonstrations of Native culture and craft will fill the domed central core of the new American Indian Museum.

New public spaces at the Old Patent Office Building include an auditorium and an art conservation lab.

LETTERS

Readers respond to the November issue:

HARLEM SCANDAL

I FOUND "Coming Up Harlem," by Peter Hellman, disturbing because of the naïveté in his glossy account of Harlem's second renaissance. The displacement of longtime residents and small businesses is equally a part of Harlem's renewal (a.k.a. Harlem's removal). The fact that Harlemites who have suffered Harlem's worst times are not going to enjoy its prosperity is scandalous.

JAMES H. LEWIS
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NEW YORK, NEW YORK

DURING THE YEARS 1936 to 1938, my two friends and I would go to the Savoy Ballroom. We were confirmed Lindy Hoppers, and if we got there before 8 p.m. we were allowed inside for 20 cents. We could dance until 4 a.m. The greatest battle of swing happened there between Chick Webb's and Benny Goodman's bands. Chick cut Benny to ribbons. I'm 85, and I don't Lindy anymore.

LENNIE STEGMAN
LAGUNA HILLS, CALIFORNIA

EARTHWATCH CHEERLEADER

I READ "Requiem for a Heavyweight" with particular interest, having spent two weeks as a volunteer in 1994 on an Earthwatch leatherback turtle project. [Earthwatch Institute volunteers help researchers on projects around the world.] After you have monitored a nesting mother turtle, you become a cheerleader for turtles!

And because of my Earthwatch experiences, I was surprised that the article "Otterly Fascinating," also in this issue, did not mention that Helen Waldemarin is the principal investigator in the otter research being conducted by Earthwatch at Fazenda Rio Negro.

SYLVIA CAMPBELL
DENVILLE, NEW JERSEY

OTTER SOCIABILITY

I ENJOYED Derek Grzelewski's article about the giant otter, but it is not true that no other otters live and hunt in groups. Our own North American otter, *Lontra canadensis*, also exhibits this social behavior. I've spent two decades studying a marine coastal population of river otters, and there have always been two social groups: a family, sometimes comprising three generations, and a male clan that contains as many as eight individuals.

J. SCOTT SHANNON
MCKINLEYVILLE, CALIFORNIA

FRIDA FRACAS

THE HISTORY described and your point of view in "Frida Kahlo" were right on, and helped to flesh out the Frida we met in the current movie. As an artist myself, I now feel Ms. Kahlo is a little bit more real to me.

JAY LASNIK
SAN FRANCISCO, CALIFORNIA

WHY WASTE space with such trash? Surely there must be better subjects than a pair of sick Communists.

ED TONER
BRICK, NEW JERSEY

MAO STATS

IN READING Stephen E. Ambrose's "Flawed Founders," I am reminded of the Chinese propensity to reevaluate the legacy of Mao Zedong. When I was in China in 1986, ten years after his death, Mao was considered to be 70 percent good for the country and 30 percent bad. In 1993, when the Cultural Revolution was more openly discussed, this rating fell to 60/40. Washington's and Jefferson's legacies may also evolve as our society does.

MICHAEL JACOBSON
SEATTLE, WASHINGTON

VIETNAM WALL

I DON'T SEE Maya Lin's original drawing of the Vietnam Memorial ("Monumental Achievement") as depicting a gash or a tear. Soft green surrounds a gentle slope where the earth has lowered itself to reveal the names of its treasure. Each and every one.

REGINA WORTHEY
SAN ANTONIO, TEXAS

HOW SAD and unfair that my brother Dan and the other veterans who died agonizing deaths from Agent Orange have been denied a place on the Vietnam Memorial.

VERN BOERMAN
SOUTH HOLLAND, ILLINOIS

GRANDDAD RIPOSTE

MY FAMILY has raised apples in Ohio since the 1820s. One of the apples mentioned in "Apples of Your Eye" reminded me of a story my grandfather told me. As a child he was confronted by an irate woman wanting to know why the Maiden's Blush apples she was buying didn't have cheeks as red as in years past. My grandfather explained without batting an eye that maidens didn't blush as deeply in modern times as they did in the past.

JEFFREY S. BECKWITH
IRVINE, CALIFORNIA

Send letters for this column to LettersEd@simag.si.edu or to **Letters Editor, Smithsonian, MRC 951, P.O. Box 37012, Washington, D.C. 20013-7012.** Please include your telephone number and address. Letters may be edited for clarity and length. Send queries and comments about the Smithsonian Institution to info@si.edu or to VIARC, Public Inquiry Mail Service, P.O. Box 37012, Washington, D.C. 20013-7012.

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Brief Summary (For full Prescribing Information, see package insert.)

INDICATIONS AND USAGE: Allergic Rhinitis: CLARINEX Tablets 5 mg are indicated for the relief of the nasal and non-nasal symptoms of allergic rhinitis (seasonal and perennial) in patients 12 years of age and older.

Chronic Idiopathic Urticaria: CLARINEX Tablets are indicated for the symptomatic relief of pruritus, reduction in the number of hives, and size of hives, in patients with chronic idiopathic urticaria 12 years of age and older.

CONTRAINDICATIONS: CLARINEX Tablets 5 mg are contraindicated in patients who are hypersensitive to this medication or to any of its ingredients, or to loratadine.

PRECAUTIONS: Carcinogenesis, Mutagenesis, Impairment of Fertility: The carcinogenic potential of desloratadine was assessed using loratadine studies. In an 18-month study in mice and a 2-year study in rats, loratadine was administered in the diet at doses up to 40 mg/kg/day in mice (estimated desloratadine and desloratadine metabolite exposures were approximately 3 times the AUC in humans at the recommended daily oral dose) and 25 mg/kg/day in rats (estimated desloratadine and desloratadine metabolite exposures were approximately 30 times the AUC in humans at the recommended daily oral dose). Male mice given 40 mg/kg/day loratadine had a significantly higher incidence of hepatocellular tumors (combined adenomas and carcinomas) than concurrent controls. In rats, a significantly higher incidence of hepatocellular tumors (combined adenomas and carcinomas) was observed in males given 10 mg/kg/day and in males and females given 25 mg/kg/day. The estimated desloratadine and desloratadine metabolite exposures of rats given 10 mg/kg of loratadine were approximately 7 times the AUC in humans at the recommended daily oral dose. The clinical significance of these findings during long-term use of desloratadine is not known.

In genotoxicity studies with desloratadine, there was no evidence of genotoxic potential in a reverse mutation assay (*Salmonella/E. coli* mammalian microsome bacterial mutagenicity assay) or in two assays for chromosomal aberrations (human peripheral blood lymphocyte clastogenicity assay and mouse bone marrow micronucleus assay).

There was no effect on female fertility in rats at desloratadine doses up to 24 mg/kg/day (estimated desloratadine and desloratadine metabolite exposures were approximately 130 times the AUC in humans at the recommended daily oral dose). A male specific decrease in fertility, demonstrated by reduced female conception rates, decreased sperm numbers and motility, and histopathologic testicular changes, occurred at an oral desloratadine dose of 12 mg/kg in rats (estimated desloratadine exposures were approximately 45 times the AUC in humans at the recommended daily oral dose). Desloratadine had no effect on fertility in rats at an oral dose of 3 mg/kg/day (estimated desloratadine and desloratadine metabolite exposures were approximately 8 times the AUC in humans at the recommended daily oral dose).

Pregnancy Category C: Desloratadine was not teratogenic in rats at doses up to 48 mg/kg/day (estimated desloratadine and desloratadine metabolite exposures were approximately 210 times the AUC in humans at the recommended daily oral dose) or in rabbits at doses up to 60 mg/kg/day (estimated desloratadine exposures were approximately 230 times the AUC in humans at the recommended daily oral dose). In a separate study, an increase in preimplantation loss and a decreased number of implantations and fetuses were noted in female rats at 24 mg/kg (estimated desloratadine and desloratadine metabolite exposures were approximately 120 times the AUC in humans at the recommended daily oral dose). Reduced body weight and slow righting reflex were reported in pups at doses of 9 mg/kg/day or greater (estimated desloratadine and desloratadine metabolite exposures were approximately 50 times or greater than the AUC in humans at the recommended daily oral dose). Desloratadine had no effect on pup development at an oral dose of 3 mg/kg/day (estimated desloratadine and desloratadine metabolite exposures were approximately 7 times the AUC in humans at the recommended daily oral dose). There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, desloratadine should be used during pregnancy only if clearly needed.

Nursing Mothers: Desloratadine passes into breast milk, therefore a decision should be made whether to discontinue nursing or to discontinue desloratadine, taking into account the importance of the drug to the mother.

Pediatric Use: The safety and effectiveness of CLARINEX Tablets in pediatric patients under 12 years of age have not been established.

Geriatric Use: Clinical studies of desloratadine did not include sufficient numbers of subjects aged 65 and over to determine whether they respond differently from younger subjects. Other reported clinical experience has not identified differences between the elderly and younger patients. In general, dose selection for an elderly patient should be cautious, reflecting the greater frequency of decreased hepatic, renal, or cardiac function, and of concomitant disease or other drug therapy. (see **CLINICAL PHARMACOLOGY – Special Populations**).

Information for Patients: Patients should be instructed to use CLARINEX Tablets as directed. As there are no food effects on bioavailability, patients can be instructed that CLARINEX Tablets may be taken without regard to meals. Patients should be advised not to increase the dose or dosing frequency as studies have not demonstrated increased effectiveness at higher doses and somnolence may occur.

ADVERSE REACTIONS: Allergic Rhinitis: In multiple-dose placebo-controlled trials, 2,834 patients received CLARINEX Tablets at doses of 2.5 mg to 20 mg daily, of whom 1,655 patients received the recommended daily dose of 5 mg. In patients receiving 5 mg daily, the rate of adverse events was similar between CLARINEX and placebo-treated patients. The percent of patients who withdrew prematurely due to adverse events was 2.4% in the CLARINEX group and 2.6% in the placebo group. There were no serious adverse events in these trials in patients receiving desloratadine. All adverse events that were reported by greater than or equal to 2% of patients who received the recommended daily dose of CLARINEX Tablets (5.0 mg once-daily), and that were more common with CLARINEX Tablet than placebo, are listed in Table 5.

Table 5

Incidence of Adverse Events Reported by ≥ 2% of Allergic Rhinitis Patients in Placebo-Controlled, Multiple-Dose Clinical Trials

Adverse Experience	CLARINEX Tablets 5 mg (n=1,655)	Placebo (n=1,652)
Pharyngitis	4.1%	2.0%
Dry Mouth	3.0%	1.9%
Myalgia	2.1%	1.8%
Fatigue	2.1%	1.2%
Somnolence	2.1%	1.8%
Dysmenorrhea	2.1%	1.6%

The frequency and magnitude of laboratory and electrocardiographic abnormalities were similar in CLARINEX and placebo-treated patients.

There were no differences in adverse events for subgroups of patients as defined by gender, age, or race.

Chronic Idiopathic Urticaria: In multiple-dose, placebo-controlled trials of chronic idiopathic urticaria, 211 patients received CLARINEX Tablets and 205 received placebo. Adverse events that were reported by greater than or equal to 2% of patients who received CLARINEX Tablets and that were more common with CLARINEX than placebo were (rates for CLARINEX and placebo, respectively): headache (14%, 13%), nausea (5%, 2%), fatigue (5%, 1%), dizziness (4%, 3%), pharyngitis (3%, 2%), dyspepsia (3%, 1%), and myalgia (3%, 1%).

The following spontaneous adverse events have been reported during the marketing of desloratadine: tachycardia, and rarely hypersensitivity reactions (such as rash, pruritus, urticaria, edema, dyspnea, and anaphylaxis), and elevated liver enzymes including bilirubin.

DRUG ABUSE AND DEPENDENCE: There is no information to indicate that abuse or dependency occurs with CLARINEX Tablets.

OVERDOSAGE: Information regarding acute overdosage is limited to experience from clinical trials conducted during the development of the CLARINEX product. In a dose ranging trial, at doses of 10 mg and 20 mg/day somnolence was reported.

Single daily doses of 45 mg were given to normal male and female volunteers for 10 days. All ECGs obtained in this study were manually read in a blinded fashion by a cardiologist. In CLARINEX-treated subjects, there was an increase in mean heart rate of 9.2 bpm relative to placebo. The QT interval was corrected for heart rate (QT_c) by both the Bazett and Fridericia methods. Using the QT_c (Bazett) there was a mean increase of 8.1 msec in CLARINEX-treated subjects relative to placebo. Using QT_c (Fridericia) there was a mean increase of 0.4 msec in CLARINEX-treated subjects relative to placebo. No clinically relevant adverse events were reported.

In the event of overdose, consider standard measures to remove any unabsorbed drug. Symptomatic and supportive treatment is recommended. Desloratadine and 3-hydroxydesloratadine are not eliminated by hemodialysis.

Lethality occurred in rats at oral doses of 250 mg/kg or greater (estimated desloratadine and desloratadine metabolite exposures were approximately 120 times the AUC in humans at the recommended daily oral dose). The oral median lethal dose in mice was 353 mg/kg (estimated desloratadine exposures were approximately 290 times the human daily oral dose on a mg/m^2 basis). No deaths occurred at oral doses up to 250 mg/kg in monkeys (estimated desloratadine exposures were approximately 810 times the human daily oral dose on a mg/m^2 basis).

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Taking Stock of Hepburn

A renowned photographer, himself the subject of a memorable portrait, caught the beguiling ingenue just as her star was rising ~ BY TERENCE MONMANEY

"Wow," Stock says of photographing the young Audrey Hepburn. "I was smitten."

DENNIS STOCK / MAGNUM PHOTOS

AUDREY HEPBURN was 24 and on the verge of movie stardom in October 1953, when a young photographer, barely a year older than she and heading for an acclaimed career of his own, took the picture at left. They were on the New York City set of *Sabrina*, a Cinderella story directed by Billy Wilder, with Hepburn playing a chauffeur's daughter who falls in love with the gadabout son (William Holden) of her father's employer, only to end up with the stolid older brother (Humphrey Bogart). It was Hepburn's second Hollywood feature, after *Roman Holiday*, which had just been released and would win her an Academy Award, and though the late critic Pauline Kael said *Sabrina* was a "horrible concoction," it glimmers with Hepburn's elegance, charm and exasperated innocence, qualities that would distinguish the actress, who died ten years ago this month.

The photographer, Dennis Stock, is nowadays recognized as a major figure—his best-known picture captures James Dean hunched against the rain in Times Square in 1955—but at the time of the *Sabrina* assignment he, like Hepburn, was an up-and-comer. A New York City native who joined the U.S. Navy at 16, he had recently won a *Life* magazine competition with photographs of immigrants at Ellis Island—pictures reminiscent of the documentary work of Lewis Hine. Before then, Stock had been working as an assistant to photographic luminaries such as W. Eugene Smith and Gjon Mili. In fact, Stock says he photographed Hepburn with a camera from *Life*'s Margaret Bourke-White. "I'd done some printing for her," he recalls. "She had one of the first Nikon 35-millimeter cameras in

Andreas Feininger's classic 1951 photograph (left) was celebrated as a dramatic blending of man and machine. Often mistakenly viewed as a self-portrait, it actually depicts Dennis Stock (right), here at work 50 years later in Nevada.

the United States and paid me with that camera."

Hepburn was waiting in the limousine's backseat when he saw the way the chrome-and-black window framed her softly glowing face, which seems all the more alluring because of her almost Kabuki eye makeup and her lost-in-thought smile. He says the photograph, first published in *Esquire*, is a "love poem" to the actress, adding: "It's not a groundbreaker. It's a nice portrait."

Stock, 74, has been represented by Magnum for five decades, but he does not do the sort of journalism or spontaneous street photography for which the prestigious agency is well known. He says he's a storyteller who collaborates with his subject. "I'll destroy any image that doesn't compliment a person," he says. "I have no right to show someone in a dark light." If other photographers and critics disdain that approach as insufficiently objective or naturalistic, so be it, Stock says; he prefers to hold his ego in check and let the subject shine.

Over the years, he has published two dozen books, the most recent being a 1995 retrospective, *Dennis Stock: Made in USA, Photographs 1951-1971.* Many museums, including the Art Institute of Chicago and the National Gallery of Art in Washington, D.C., have acquired his photographs. But there is no picture by him more historic than a picture *of* him—a 1951 portrait by Andreas Feininger. The French-born, German-raised Feininger, who moved to the United States in 1939 and died in 1999 at age 92, specialized in monumental cityscapes; trained as an architect, he had a knack for dramatizing geometry. He was a staff photographer for *Life*, and took Stock's picture after Stock won the magazine's young-photographers contest. It remains a seminal mid-century image, ranked by the Fahey/Klein Gallery in New York, for instance, as one of the top 70 photographs ever reproduced, right up there with the classic news photograph of the explosion of the *Hindenburg* dirigible at Lakehurst, New Jersey. Many viewers assumed that Feininger's picture, originally titled *The Photojournalist,* is a self-portrait. (Years later, the title would sometimes carry Stock's name.) Stock says the photograph, in which the camera's lens and viewfinder replace the subject's eyes, captured a common feeling of the time, that human beings and technology were merging. It also succeeds, he quips, because "I'm not so good-looking that someone should do a full portrait of me."

Stock now lives in Essex, Connecticut, where he sometimes uses a long lens to photograph swans, Canada geese and other wildlife that visit a pond on his property. (Beyond that, he didn't want to talk about his personal life.) His last project was photographing spring tulips in Holland in 2001—a far cry from James Dean, if not Audrey Hepburn—and he says he doesn't know what his next move might be: "It gets harder and harder to find themes that are new." ○

TERENCE MONMANEY is a senior editor at SMITHSONIAN.

ANDREAS FEININGER / TIMEPIX; DAVID ALAN HARVEY / MAGNUM PHOTOS

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Life in the Fast Lane

Harry Truman's pals installed a bowling alley in the White House so the new president could escape the heat of the kitchen ~ BY ED LEIBOWITZ

[*White House bowling pin* NATIONAL MUSEUM OF AMERICAN HISTORY]

IT SEEMED LIKE an appropriate 63rd birthday present for a rock-ribbed Missourian and plainspoken president with a "The Buck Stops Here" sign conspicuously displayed on his Oval Office desk. In 1947, at the suggestion of Harry S. Truman's military aide and World War I buddy, Maj. Gen. Harry Vaughn, a group of anonymous Kansas City, Missouri, well-wishers commissioned a two-lane bowling alley, constructed that spring in the lower reaches of the West Wing.

Actually, Truman preferred taking morning constitutionals, sitting down for a good game of poker (or hefting the occasional tumbler of bourbon); he hadn't bowled a single frame since he was 19. When he inaugurated the West Wing alleys two weeks before his May 8 birthday, a photographer snapped a picture: we can feel the president's pain. One reporter described him as "grimly determined." Harry's teeth were gritted, his shoulders hunched, and the ball in his left hand looked as heavy as a ship's anchor. (He did succeed in knocking down seven of the ten pins.) One of the more banged-up of them found its way by some unknown means into the personal possession of a Smithsonian archaeology lab technician, the late Robert Jenkins.

At some point in the late '60s, Jenkins donated the pin to the National Museum of American History. "Its importance," says Harry Rubenstein, curator of political history at the museum, "lies in the fact that it is one of those objects that serves to humanize the presidency." But does it? Or does Truman's awkward attempt at normalcy, documented in black and white, only further illustrate the gulf between

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the president and the public? "In America, we do remain ambivalent," says the NMAH's curator of social history, Barbara Clark Smith. "Do we want someone who is better, wiser, with a good education and wellborn, or do we want someone to be more like us? I can see how that puts a strain on politicians. The photo ops tell us more about our own confused expectations and less about who the man in the White House really is."

In 1950, after the lanes had languished, largely unused, for several years, General Vaughn encouraged Executive Branch employees to form the White House Bowling League, the first in the nation's capital to be sanctioned by the American Bowling Congress, the sport's official governing body. Paul Yost, Sr., a former Secret Service agent and the league's founding president, recalls the special qualifications of its charter members. "If you worked at the White House, you had top security clearance, so you could bowl there," says the 88-year-old Yost, who has a few leftover White House pins of his own lying about his Vista, California, home. "Out of ten teams, three or four were from the Secret Service. There was a domestic help team, a gardeners' team. And there was one team of ladies, mostly secretaries and telephone operators. We gave them a pretty big handicap, 100 points, and they beat us. We had to change it a little so they wouldn't win all the time." The league took care of maintenance, equipment and organizational dues. "It did not cost the government anything," Yost recalls, "except when we had to turn the lights on." At tournaments around the country, opposition teams didn't know what to make of the bowling shirts of Yost's team, embroidered with "White House 5" (for Yost's own five-man team within the league) across the back. "People thought we were from a restaurant," Yost says. "They didn't know we were from the *real* White House." Eleven months after the league was established, one of its members, Secret Service officer Leslie Coffelt, was killed when two Puerto Rican nationalists made an attempt on Truman's life. (The president was unharmed.)

Truman (displaying a form not likely to win the bowling vote) inaugurated the new White House lanes April 20, 1947, managing to topple seven of ten pins.

In 1955, the Eisenhower administration claimed the league's home for a mimeograph room, and the lanes were moved next door into the Old Executive Office Building. Though neither Eisenhower nor John F. Kennedy had much use for bowling, Lady Bird Johnson did, competing against Muriel Humphrey and playing almost daily.

In the early '70s, President Richard Nixon took up the sport. According to James E. Mattingly, a Treasury Department officer who heads the league today, Nixon would dial the home of the night manager of the White House mail room and longtime league treasurer Joe Taylor late at night. "Nixon would say, 'Joe, what are you doing?'" Mattingly recalls. "Joe would say, 'Nothing.' Nixon would say, 'I feel like bowling.' Joe would hop right over; he could get into town in 15 minutes; he'd keep score for the president. Sometimes Nixon didn't say a thing, and would just leave at the end, but sometimes he was loquacious."

The league's last game on the historic lanes in what is now called the Eisenhower Building took place September 10, 2001. The next day, league members were denied entrance. White House spokesman Taylor Griffin says that "after the tragic events of September 11, security required that access to the complex be more limited." According to Mattingly, league leaders have been allowed back only in order to pack up their trophies, photographs and memorabilia.

These days the White House florists, food-service workers, secretaries, groundskeepers and stewards (as well as their friends and family members), along with Secret Service agents and government retirees, who make up the league, bowl at Fort Myer, a suburban Virginia Army post. Mattingly says he has petitioned the Secret Service for a return to the old lanes, so far without success. "We're going politely, hat in hand, trying to get in there," he says. "We're trying to work with them as best as we can." ○

ED LEIBOWITZ, based in Los Angeles, writes frequently on American history.

BETTMANN / CORBIS

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To Catch a Comet

The first spacecraft to land on an orbiting ice ball will dig for clues to the birth of the solar system and the origins of life on Earth ~ BY NIGEL HEY

IF ALL GOES AS PLANNED, an Ariane-5 rocket will blast off from Kourou, French Guiana, this month and loft into space a truck-size contraption known as Rosetta. A project of the European Space Agency, which manages space exploration programs for 15 European nations and Canada, Rosetta took nine years to plan and build and will cost nearly $1 billion. It isn't scheduled to reach its ultimate destination for nearly a decade when, some 400 million miles from Earth, it will be the first spacecraft to land on a comet.

As far as scientists know, comets are dirty chunks of ice up to several miles wide that streak through the solar system in generally elliptical orbits, taking anywhere from a few to hundreds of thousands of years to travel around the Sun. Some comets veer close enough to Earth to be observed through a telescope as a dot of light with a long fluorescent tail streaming away from the Sun in the solar wind. The reappearance of some comets, like Halley's, an especially large and bright one that drops by every 76 years or so (most recently in 1986), has been celebrated or dreaded as an omen for centuries.

Around 2012, the lander will probe the comet's surface as the Rosetta craft orbits.

DOUG STERN (2)

Planetary scientists today view comets as cosmological fossils, relics of the solar system's birth 4.6 billion years ago. Some even speculate that one or more comets might have played a crucial role in the origin of life on Earth by delivering necessary raw materials.

Thus scientists' excitement over Rosetta, which aims to catch up with a comet called Wirtanen in November 2011 and land on it within a year—providing the first direct chemical analysis of a comet's terra firma. Astronomers targeted Wirtanen, a smallish comet less than a mile in diameter (named after the late Carl Wirtanen, who discovered it in 1948), because it will be in the right place at the right time; eight years from now, it will be nearly as far from the Sun as it gets during its five-and-a-half-year orbit. Solar heat roils a comet's core, called the nucleus, causing solid matter to transform into gases and create the signature glowing atmosphere, or coma, and its dazzling tail; as a comet nears the Sun, its coma can swell up larger than the Earth and its tail can stretch millions of miles.

With Wirtanen cruising out by Jupiter's orbit, scientists predict the detached Rosetta lander, slightly smaller than a washing machine, will have the smoothest possible descent through the coma to the nucleus, where it will conduct analyses for days or longer. The

mothercraft will orbit the comet as it races toward the Sun. Both craft will send data to the Rosetta control station in Darmstadt, Germany, via a satellite facility in Perth, Australia.

Rosetta is only the most elaborate cometary expedition out of several in the works. NASA's Stardust probe, launched in 1999, is expected to fly within 100 miles of a comet called Wild-2 in January 2004, gather coma particles and return the samples to Earth two years later in a capsule parachuted down to a Utah desert. Another NASA mission, called Deep Impact and scheduled for launch in January 2004, will fly by a comet 18 months later, fire an 800-pound copper missile at the nucleus—and then observe the explosion and ejected material.

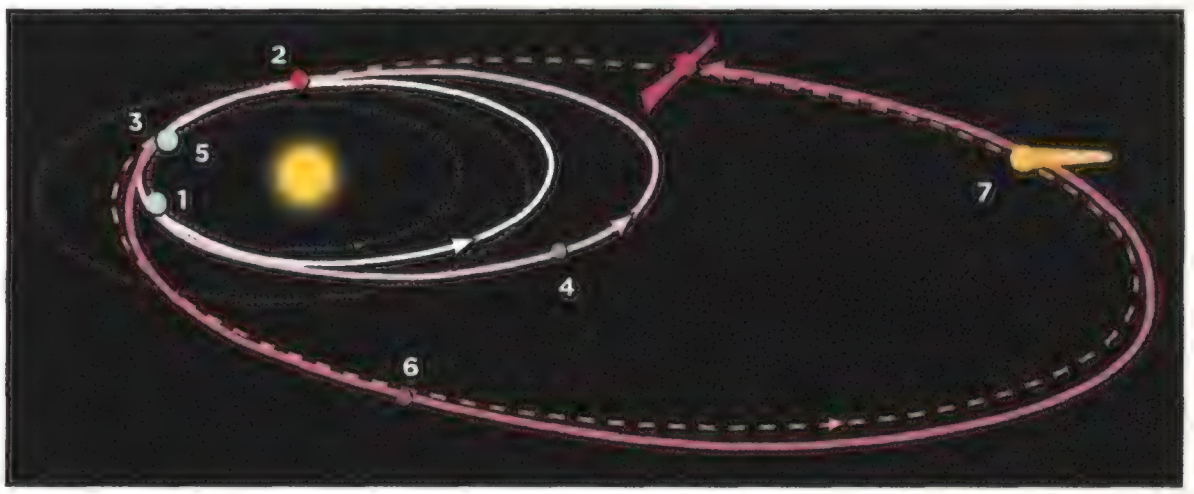
Compared with such brute-force science, Rosetta's probe of Wirtanen is delicate exploratory surgery. To get there, the two-ton spacecraft will separate from the rocket launch vehicle, pop out its 7-foot antenna dish, unfold its 46-foot-long solar panels and spiral around the solar system, flying close by Mars, Earth and then Earth again to harness the planets' gravitational forces. In the asteroid belt between Mars and Jupiter, the spacecraft will linger over two asteroids—mainly rocky bodies that are larger than comets and, like planets, travel in circular orbits—before meeting up with Wirtanen. About nine years after liftoff, Rosetta is scheduled to get down to business at a distance more than three times farther from the Sun than is Earth. The orbiter will map Wirtanen's surface and gauge the coma's chemical makeup. Sensors will sort, weigh and identify coma dust grains. Other sensors will listen in on the radio "static" of ions charged up by collisions with the solar wind. At the same time, the lander (if all goes well) will drop through the coma, perhaps fire its retrorocket thrusters and settle onto its tripod support. Harpoons fired into the ground will keep the lander from floating away. Solar panels will provide electricity while seven electronic cameras on the lander capture panoramic views. A drill will bore at least eight inches into the surface, grab material and place it into the computerized chem lab for examination and exposure to high heat in tiny ovens, the better to identify cometary matter by mass spectrometry and gas chromatography.

A vital question among planetary scientists concerns what types of carbon compounds a comet might harbor. Though they have observed that comas contain simple carbon compounds like carbon dioxide, it's a matter of debate whether the nuclei contains larger, more complex carbon compounds that scientists say might have played a role in starting life on Earth. To be sure, scientists believe that the nascent planet probably had complex carbon compounds as well as the nitrogen and oxygen compounds also necessary for life; it's just that the molecules were buried beneath the surface and not available to incipient life processes. Indeed, some scientists argue that it was volcanic eruptions that conveyed those compounds to the Earth's surface, not cometary impacts.

If Rosetta detects complex carbon molecules in Wirtanen's nucleus, that will strengthen the theory that cometary impacts helped catalyze the formation of life on Earth. "It is likely that when the Earth was young, comets like Wirtanen colliding with Earth brought the organic materials of carbon, hydrogen, oxygen and nitrogen that became the building blocks of life," says David Levy, who has discovered 21 comets—13 with Carolyn and Eugene Shoemaker—including Shoemaker-Levy 9, which spectacularly crashed into Jupiter in 1994. "When Rosetta visits comet Wirtanen, it will be doing nothing less than encountering our own ancestry."

A close encounter could open a whole raft of cosmic questions as well as advance the notion that Earth is not unique. "If this process [of transporting organic materials from outer space] happened here, it likely also happened on many other planets throughout the galaxy, since we think that comets are a natural predecessor to planetary formation," says Paul Weissman, a planetary scientist at the Jet Propulsion Laboratory in Pasadena, California, and a member of the Rosetta team. "Understanding the starting point for life on Earth allows us to generalize and suspect that the opportunities existed for the same thing to happen elsewhere."

Whatever the inquiry's outcome, Rosetta promises to deliver a galaxy of information. "By having a sample of that material . . . we have the starting conditions for the formation of our planetary system," says Weissman. "This is a tremendous leap forward in understanding the physics and chemistry of planetary formation." ○



Rosetta is scheduled to take off this month (1) and, flying counterclockwise, pass by Mars in August (2) and Earth in November 2005 (3); observe asteroid Otawara in 2006 (4); fly by Earth again in 2007 (5); observe asteroid Siwa in 2008 (6); catch comet Wirtanen in 2011 (7) and land on it in 2012. In the drawing (not to scale), Wirtanen's orbit is orange and Rosetta's widening orbits are increasingly pink.

NIGEL HEY, based in New Mexico, is the author of the 2002 book Solar System.

JUST LOOKING

SEEING EYE TO EYE Friday, September 27, 2002: Hundreds of protesters against the International Monetary Fund and World Bank were arrested in a park east of the White House. Angered by the arrests, another crowd blocked the street; mounted police moved in to control it. But this young woman—who gave her name only as Lenore—didn't budge. Instead, she stood talking softly to Big Red, U.S. Park Police Officer Calvin Covington's partner, for more than an hour. Then Big Red, more than 17 hands tall, lowered his head to hers. *Washington Post* photographer Carol Guzy caught the meeting of minds, a rare occurrence that weekend.

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Artists of the 1960s Arte Povera group used the mundane (in this case, lettuce) to study the immaterial (evaporation wilts the lettuce, the stone falls) and invited participation (a Hirshhorn staffer replaces the head every day).

TOM WOLFF

Lettuce All Participate

The Italian avant-garde played with time, gravity and the boundary between art and us

KEN BRANNAN, a Maryland caterer and coffee vendor, has something the Hirshhorn Museum and Sculpture Garden needs. Not a Picasso. Not a Dubuffet. Certainly not a check upon which a stream of zeroes floats like the contrails of a Learjet.

He has lettuce. Heads and heads of organic, hydroponically grown Boston lettuce.

No, the staff is not on a diet. The art is.

It's all part of an exhibition of 140 works called "Zero to Infinity: Arte Povera 1962-1972" that opened at the museum in October. Arte Povera—which translates, roughly, as "poor art"—was the phrase coined in the 1960s to describe the work of a loose-knit group of Italian artists. The name referred, in part, to their use of humble materials, such as dried tobacco leaves, bedsheets, coal, cactus and—more to the point—lettuce, a key element in Giovanni Anselmo's 1968 sculpture *Senza titulo* (*Untitled*).

Anselmo wedged a head of lettuce between two blocks of granite and lashed the trio together with copper wire. In doing so, he, like his Arte Povera compatriots, welcomed into the hitherto narrow definition of art such immaterial forces as time and decay, evaporation and gravity. As the lettuce wilts and shrivels throughout a day on display, the tension holding in place the smaller of the two stones slackens. The small stone might—just might!—fall.

Anselmo, now 68 and working in Turin, Italy, also challenged the distance that traditionally existed between artwork and spectator. "In Arte Povera, rather than coming into a gallery and passively looking at paintings and sculptures, people become participants," says Hirshhorn curator Phyllis Rosenzweig. In Anselmo's 1971 piece *Invisibile*, for example, a slide is projected into the gallery space, but there's nothing to see until someone strolls in front of the projector and becomes the screen on which the Italian word *visibile* appears. *Senza titulo* requires its own involvement, says Rosenzweig: "With the lettuce sculpture, at least one other person has to maintain the piece."

Make that many, for more than one person has become entangled in Anselmo's web of involvement. First, there is Heidi Treuenfels, in the Hirshhorn's Development Office. She had to track down the unusual staples required for the

exhibit. Because the list included coffee beans and because Treuenfels is a caffeine addict, she thought of Brannan, who owns a Seattle's Best Coffee franchise in the Arts and Industries Building, the Hirshhorn's neighbor on the Mall. Brannan, intrigued, promised Treuenfels 25 pounds of coffee beans, and then equal amounts of kidney beans, black-eyed peas, lentils, split peas and white rice, as well as 425 pounds of corn kernels, all components in a sculpture by Jannis Kounellis. As well as a steady supply of Boston lettuce for the Anselmo.

(When Brannan finally saw the sculpture, he was amused: "It looked smaller than it had in pictures. After all, the lettuce was just lettuce.")

Then there's Catherine Satterlee, an exhibits technician who walks twice weekly from her Hirshhorn office to Brannan's concession to pick up the lettuce. And when Satterlee replaces the head of lettuce every day or so, she participates in Anselmo's art. "Maintain pressure on the small square stone and the lettuce while pulling the copper wire down," the exhibit manual directs. "Place your knee against the small square stone to hold it in place while pulling the copper wire back over the lettuce and the small square stone until taut." That's Arte Povera at its most intimate. —*VICTORIA DAWSON*

"Zero to Infinity: Arte Povera 1962-1972" is on view at the Hirshhorn Museum and Sculpture Garden through January 20. For more images and information visit www.hirshhorn.si.edu.

FROM THE ATTIC

HOW MANY TAXIDERMISTS DOES IT TAKE . . . ? From his first day at the Smithsonian, March 1, 1908, taxidermist William L. Brown (far right, above) had a weighty goal: to successfully prepare a hippopotamus for display. In attempts at other museums, hippo skin proved tricky to tan and always cracked. And the skins had no hair to disguise the wooden armature used for support. For 20 years, Brown prepared by observing and sketching a live hippo—called Old Mom—at the National Zoo. When, on February 4, 1930, the 5,000-pound hippo died, Brown entrusted her hide to a master tanner, who never revealed his secret formula. ("Finest tanned skin I ever saw," Brown marveled. "Soft as a kid glove.") Then Brown placed it over a clay model, kneading and pinching to sculpt the animal's wrinkles. In 1934, Old Mom debuted. This November, still in tip-top condition, she will reappear in the National Museum of Natural History's refurbished mammal hall. —*BETH PY-LIEBERMAN*

Enter Africa

In the reborn entry to the Museum of African Art, a five-minute film captures the face of Africa

A FISHERMAN FLINGS a spidery net against a backdrop of blue water. Brightly costumed dancers cavort on stilts. A boy kneads a mound of clay with his feet. These images and others of a vast and varied continent, distilled into a five-minute film and projected on a 19-foot wall, constitute the centerpiece of the redesigned entrance pavilion at the National Museum of African Art, located behind the Castle on the National Mall.

The atriumlike space has been transformed from the stark interior familiar to visitors since the museum opened 15 years ago. Now, touch screens offer instant access to highlights of the collection. On prominent display are five works of art, including a Malagasy funerary carving of a man and a 19th-century abstract mask that was worn at Cameroon celebrations. A monitor on one wall flashes facts about Africa: "Kilima Njaro means 'shining mountain' . . . Africa has 900 cultures and 600 languages . . . " And the film, which runs continuously during visiting hours, offers a kaleidoscopic glimpse of the continent's more than 50 countries. Says Michael Briggs, the museum Webmaster and the film's di-

Wearing a ceremonial cap and carrying spears, this Bamum man (of Cameroon) honors his sultan. The image is from a new film at the Museum of African Art.

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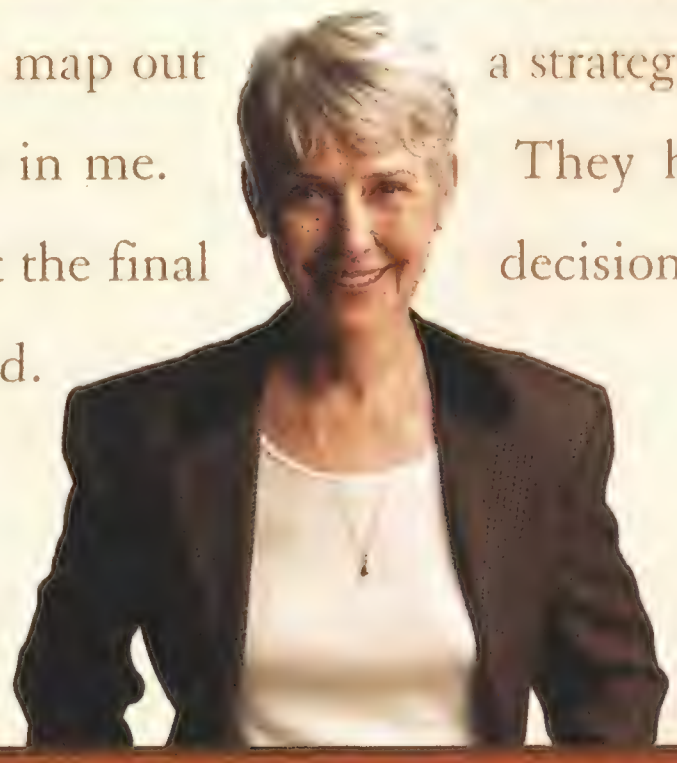

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The new entryway of the Museum of African Art features a short film that samples the vast continent's diversity, as well as works from the permanent collection, such as a ceramic vessel (above, left) by Kenya-born Magdalene Odundo.

rector: "We wanted to catch the spirit of Africa."

To do so, Briggs and other museum staffers pored over thousands of photographs and audiovisual materials, including animated shorts by South African multimedia artist William Kentridge and 20 miles of documentary film shot by Eliot Elisofon, the late *Life* magazine photographer. The visual trove yielded more than a dozen clips, including images of the bustle of street markets and artists making kente cloth.

For the sound track, Briggs used the music of African performers, such as Tanzanian singer Hukwe Zawose, who is opening for singer Peter Gabriel on his current tour, and Nigerian musician Nana Tuffour, who combines jazz, reggae and hip-hop with traditional African rhythms. To link the songs—there is no narration—Briggs asked education specialist Peter Pipim, who is from Ghana, to create a track of sounds from nature. The result is a gentle symphony of bleating goats, chirping crickets and crowing roosters. "What I wanted," says Briggs, "is the sounds I would hear if I were approaching a village through the bush."

Does he have a favorite image? Yes, a snippet from Elisofon's footage: a young girl performing a slow tribal dance, her cheeks painted bright white and her half-smile bewitching. "The pride in that little girl's face," Briggs says, "is so . . . large."

—TOM DUNKEL

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HURRY IN

"Latin Jazz: La Combinación Perfecta" closes at the Arts and Industries Building January 18. It then goes on a three-year tour, traveling first to Flushing Town Hall in Flushing, New York, where it will remain through June, and later to nine other U.S. cities. The bilingual show includes conga drums autographed by percussionist Poncho Sánchez.

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Man in the Middle

Travels with Kofi Annan

BY STANLEY MEISLER

Kofi Annan (above, in Sudan during a five-nation trip this past July) is "very open, very inclusive," says a United Nations colleague, "whether you are a king or queen or a man in the street."

THE TRIP WOULD TAKE Kofi Annan, the Secretary-General of the United Nations and a Nobel Peace laureate, first to Vienna for a meeting with Iraqi officials and then to Africa, where he would visit four nations in eight days to continue his particular brand of relentless yet soft-spoken diplomacy. Annan, 64, has been with the U.N. for 40 years, but unlike many career bureaucrats, he doesn't shrink from trouble and is said to grow calmer as a crisis mounts. He has represented the world body in international and civil conflicts in Iraq, Bosnia and Herzegovina, East Timor and other hot zones, and he oversaw the U.N.'s 70,000 peacekeeping troops and civilian workers from 1993 to 1996. The next year he became the seventh Secretary-General—the first to rise through the U.N. ranks and the first black "diplomat in chief."

After the terrorist attacks in New York City, Washington, D.C. and Pennsylvania on September 11, 2001, about which he said "we have entered the third millennium through a gate of fire," it seemed especially important to observe Annan in action. So one day this past July, I found myself sitting on a chartered Boeing 737 at New York's Kennedy Airport with the Secretary-General's entourage when Annan walked up to me shortly before take-off. He touched my shoulder and, alluding to the days I covered the U.N. for the *Los Angeles Times* (for five years in the 1990s), gave me a warm greeting. "It's good to see the old warrior back," he said.

He has a soft voice and speaks English with a British-African lilt. He was born into a prominent family in Kumasi, Ghana, a British colony from 1874 to 1957, where his father, Henry Annan, managed a Lever Brothers subsidiary that exported cocoa before working for the British as governor of Ashanti Province. Kofi's mother, Victoria, was a homemaker. His twin sister, Efua, died in 1991. Young Kofi (the name means Friday, the day he was born) started college in his home city but won a Ford Foundation grant and finished at Macalester College in St. Paul, Minnesota, receiving an economics degree in 1961. He went on to graduate studies in economics at the Institut Universitaire de Hautes Études in Geneva and, a decade later, earned a master's degree in management at MIT. Tellingly, his most advanced academic training is in getting things done.

It was after attending school in Geneva that he went to work for the U.N., as a low-ranking World Health Organization functionary. Except for an unhappy interlude running the Ghana tourism bureau from 1974 to 1976—where he said he "couldn't move the system, there was too much red tape, too many roadblocks"—he would spend his entire career with the U.N., taking posts in Geneva, Addis Ababa, Ismailia and New York.

Annan's colleagues trace his climb to the top of the vast U.N. bureaucracy, comprising some 15,000 employees, in large part to his efficiency, evenhandedness and dignity. "It is difficult to imagine how straightforward he is," says Lamin J. Sise, a Gambian who has worked with Annan for a decade. "His style is very open, very inclusive. And he is that way

with everyone, whether you are a king or a queen or a man in the street." Annan was Under-Secretary General for Peacekeeping when the U.N.'s police role was growing fast; though initially expected to handle only administrative and budget matters, he ended up running field operations and making policy. Turns out he was good at it and earned the admiration of diplomats and the U.N. elite alike.

Annan's approach as Secretary-General differs from that of his predecessors. He's a world apart from Kurt Waldheim, of course, the Austrian known to some reporters as "the Headwaiter" because he was so obsequious to the United States and the Soviet Union; Waldheim ultimately brought disgrace to the U.N. office when it was revealed that he had been a Nazi Students League member and served in a German Army unit that arrested thousands of Jews and sent them to Auschwitz. Temperamentally, Annan is a mirror image of his predecessor, Boutros Boutros-Ghali, an Egyptian intellectual who struck some observers as arrogant and alienated some diplomats, particularly U.S. Ambassador Madeleine K. Albright. In Annan's view of the U.N.'s overarching moral authority, he is perhaps closest to Dag Hammarskjöld, the Swedish political economist, diplomat and mystic poet who was awarded a posthumous Nobel Peace Prize in 1961 after trying to negotiate an end to civil war in the Congo and dying in a plane crash in Central Africa. Annan was then about to begin his U.N. career, as he pointed out in his 2001 Nobel address, in which he said Hammarskjöld and fellow Peace laureate, South African anti-apartheid activist Albert Luthuli, "set a standard that I have sought to follow throughout my working life."

Swedish statesmanship is something of a theme in Annan's life. He's married to Nane Cronstedt, a Swedish artist, lawyer and social activist—and a niece of Raoul Wallenberg, the heroic Swedish diplomat who saved thousands of Jews from the Nazis at the end of World War II. Annan and Cronstedt met in 1981 when both worked in Geneva for the U.N. High Commissioner for Refugees. They married in New York three years later. He has two grown children from a previous marriage, and she has one. In addition to painting and sculpting, she works on behalf of AIDS education and other U.N. causes and has written a book about her experiences accompanying Annan on official visits. The couple, who live in the official Secretary-General residence in Manhattan, blaze through the city's highest circles, counting Mayor Michael Bloomberg among their friends. Annan is the "social star of New York society," William H. Luers, the former president of the Metropolitan Museum of Art, told the *New York Times*. Annan said he accepts social invitations and attends functions during the week (the couple reserve weekends for themselves) because the city is so vibrant that "on any subject—you name it—you'll find someone to discuss it with." Others divine a deeper motive, speculating that Annan recognizes the value, as few other U.N. leaders have, of mixing with important people outside politics. A clue to his effectiveness as a diplomat appears in a *Times* photograph of him at a Manhattan soiree with Microsoft CEO Bill Gates: Annan is doing the listening.

Annan, who is also fluent in French and a few African languages, parries as well as any diplomat, but he isn't glib. He seems completely at ease with himself, and is often more candid than one might expect. He once told a French interviewer that he had trouble recruiting African troops to serve on U.N. peacekeeping forces because some African leaders "probably need their armies to intimidate their own populations." And he's egalitarian in his approach to on-the-job training. He told me he likes to meet with *former* leaders—to learn from their mistakes.

Before Annan (far right), the Secretaries-General since the U.N. was chartered in 1945 were (from left) Trygve Lie, Norway; Dag Hammarskjöld, Sweden; U Thant, Burma; Kurt Waldheim, Austria; Javier Pérez de Cuéllar, Peru; and Boutros Boutros-Ghali, Egypt.

Nothing has tested Annan's skill and resolve, nor tried the patience of U.S. leaders, more than his negotiations with Iraq. In 1998, Annan flew to Baghdad to negotiate an agreement with Saddam Hussein to allow U.N. inspectors to go anywhere in the nation. "Saddam is very calm and polite," Annan told British author and journalist William Shawcross at the time. "He looks like somebody's uncle. But if you mistake his calmness and soft-spokenness for weakness, you're in trouble." In that conversation, Annan invoked a comment famously made by his wife's uncle, Wallenberg: "To do good, you sometimes have to deal with the devil." After the Iraqis signed the agreement, the United States suspended plans to

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STANLEY MEISLER, a former Los Angeles Times *correspondent, is author of the 1995 book* United Nations: The First Fifty Years.

BETTMANN / CORBIS; HULTON-DEUTSCH COLLECTION / CORBIS; BETTMANN / CORBIS (2); BALAGUER ALEJANDRO / CORBIS SYGMA; CORBIS; AP / CORBIS

"The U.N. stepped up to its responsibilities, and I want to thank you," President George W. Bush told Annan after the Security Council's November vote requiring Iraq to allow weapons inspections.

PABLO MARTINEZ MONSIVAIS / AP

bomb Iraq, and Annan was hailed as a hero. But Hussein soon reneged on the deal, and U.S. and British forces bombed military and suspected secret armament sites throughout Iraq for four days.

Annan had been duped by the Iraqi leader and made to seem weak before the whole world. Senator Trent Lott, the Mississippi Republican, accused him of "appeasement." Despite setbacks, Annan keeps trying. "In the kind of work I do," he told me, "whenever you have the opportunity to try to help avoid a conflict, even if you can save only one life, it is worth it. To try, and then to fail, is not something I consider a discredit."

Then, at the first stop on July's trip, Annan pressed his case yet again, at U.N. offices in Vienna, where he held closed formal talks with Iraqi Foreign Minister Naji Sabri. Iraq had barred U.N.-sponsored weapons inspectors for four years. Sabri kept listing onerous conditions for the return of inspectors, but Annan said he would not meet with the foreign minister again until Iraq allowed unconditional inspections of its weapons facilities. The talks ended without an agreement after two days.

Annan, like the Bush administration, was seeking to eliminate Saddam Hussein's weapons of mass destruction. But Annan hoped he could achieve the goal peacefully—or, failing that, by multilateral military action backed by U.N. approval, not unilateral U.S. intervention. The position inflamed conservatives who believed Annan was undermining U.S. interests. A *Los Angeles Times* cartoonist depicted Annan as Neville Chamberlain, the British prime minister who tried to appease Hitler on the eve of World War II.

Vindication finally came this past November, when the U.N. Security Council, the 15-member body that sets U.N. policy, approved a United States-sponsored resolution demanding that Iraq accept weapons inspectors or face a possible invasion. Annan personally ensured the unanimous vote—he wanted Iraq to see a world united—by lobbying Syria's President Bashar al-Assad, the last holdout. At a White House meeting with Annan, President Bush thanked him for rousing the U.N. to action. At a dinner in Washington honoring Annan, CNN founder (and United Nations benefactor) Ted Turner said: "He has the toughest job in the world and everybody loves him. He doesn't make anybody mad at him, not even Saddam Hussein."

THE MIDDLE EAST may preoccupy him these days, but Africa still defines him. "I feel very African," Annan says. "My roots are deeply, deeply African."

We stopped for fuel in Libreville, the capital of Gabon. Receiving the group at the airport, Prime Minister Jean-François Ntoutoume-Emane led us past an honor guard of female soldiers in royal blue kepis and gold-trimmed capes. At a reception in a terminal, U.N. workers gathered around

At Macalester College in Minnesota, Annan studied economics, played soccer—and, in 1960, set a school record in the 60-yard dash.

Annan to tell of a pressing humanitarian problem. Gabon is a rich nation, thanks to hardwood forests and oil reserves. Parents in Cameroon, Nigeria and other nations, seeking a better life for their children, arrange for them to be smuggled across the border. Some 15,000 to 20,000 foreign children are in Libreville illegally. Many roam the streets begging. The U.N. and private humanitarian groups are trying to return them to their homelands, but Gabon levies a fee on each exiting child. Annan urged advocates to lobby the government to abolish the fees.

Aboard the plane after it left Libreville, Annan, relaxing in a bright red sweater, consented to a lengthy interview. In the old days, if a journalist's question promised to stir controversy, he would smile and his eyes would glint as he contemplated the trouble that would likely engulf him if he replied without inhibition. Then he would barge ahead and answer anyway. He laughed when I recalled that tendency. But as Secretary-General, he could no longer speak so frankly. "Words are powerful," he said. "They consume. They can inflame. They can complicate. So given the situations I often deal with, I cannot always speak my mind as I like."

Still, he showed flashes of the old candor. Recalling his years of work on behalf of human rights and economic growth in African nations, he criticized local leaders' failures to follow through. "Sometimes I'm appalled by the posturing and lack of realism that goes on," he says. The crawling pace of progress has angered him. "There are times when I became frustrated and exasperated. If you take my own country, Ghana, it became independent about the same time as Malaysia. I think about the time of independence, we had about the same amount of reserves at the Central Bank. And yet look at the difference—where Malaysia is today and where we are." Malaysia's gross domestic product is $10,300 per capita, while that of Ghana is $1,900. In fact, if Ghana had had a healthier economy back at the time Annan got out of college, he once said, he probably would have stayed there and worked for a big corporation, perhaps entering politics in his later years.

Thus the world would have been deprived of a diplomat whose gifts for bettering his fellow man's lot, by many accounts, were apparent even in his childhood. After he led a hunger strike at his boarding school—the Mfantsipim Secondary School in Cape Coast—to protest the food, the British headmaster capitulated and improved the cooking. Akipataki O. Akiwumi-Thompson, a Ghanian businessman and a classmate at Mfantsipim, recalls Annan's diplomatic skills. Though seniors had the right to punish lowerclassmen for infractions like disrupting study hall or sporting dirty fingernails, Annan "had his way of talking to the seniors without antagonizing them," says Akiwumi-Thompson. "He could calm them down and persuade them not to punish him." The pair broke the rules on many Saturdays, he recalled, by visit-

UN / DPI PHOTO

ing the nearest girls' school, which they reached by pedaling their bicycles 20 miles. For that infraction, Annan's powers of persuasion were not needed. "We were never caught," says Akiwumi-Thompson.

Ghana is a long way from Minnesota, and Annan learned a thing or two about adapting to a foreign culture his first winter at Macalester College in 1959. Seeing the earmuffs that locals wore, he couldn't bring himself to put on such unsightly headgear—until the windchill plummeted to 35 degrees below zero and his ears stung. He ran out and bought the biggest earmuffs he could find. "The lesson," he recalls telling students at a Macalester commencement ceremony a few years ago, "is never think you know more than the natives do." His time there wasn't entirely humbling. He won an oratory championship with a speech about America's responsibility toward the newly developing nations of the world. His debate coach, communications professor Roger K. Mosvick, recalls being dazzled by Annan's "wonderful, powerful Ghanaian Oxford-like accent." And on the track team, he set a school record in the 60-yard dash that stood for a dozen years.

Annan, who is descended from chiefs of the Fante ethnic group in both his father's and mother's families, has occasionally said that he plans to return to Ghana when he retires. A decade ago, tribal elders, following the death of a paramount chief—the highest tribal post—asked if he would be interested in taking over the honored role. He declined.

A key step in Annan's U.N. rise was engineered by the United States. In 1993, when Marrack Goulding, then Annan's boss at the peacekeeping department, balked at the Clinton administration's plan to replace U.S. Marines in Cambodia with a U.N. peacekeeping force, the Americans pressured Boutros-Ghali to replace Goulding with Annan because they viewed him as "more flexible." Boutros-Ghali did so.

SERGEI BERMENIEV / UN PHOTO

Annan took his wife, Nane, and their children, Kojo Annan, Nina Cronstedt de Groot and Ama Annan, to Stockholm when he got the Nobel Prize in 2001.

It was a tumultuous time to lead the blue-helmeted forces that world citizens had increasingly come to rely on to patrol cease-fire lines, protect humanitarian convoys and stem violent conflict. When ethnic carnage persisted in Bosnia, and U.N. peacekeepers were too few to prevent massacres in Rwanda, the brunt of the blame went to Boutros-Ghali and the U.N. generally, not Annan. U.N. Under-Secretary-General Shashi Tharoor, of India, who worked for Annan at the time, says Annan wasn't tarnished by the peacekeeping failures because "an awful lot of people saw him as someone doing the best job he could in impossible circumstances, and doing it in a way that was completely transparent."

The United States again intervened on Annan's behalf, in 1996. By then, relations between Boutros-Ghali and Albright had become so strained that the American ambassador vetoed his bid for reelection, though the 14 other Security Council members voted for him. Two things favored Annan's ascension: his popularity among diplomats and staff, and his African birth. Boutros-Ghali had been elected Secretary-General after African delegates insisted it was Africa's turn to fill the job. Now, five years later, Security Council members agreed to name another African to succeed Boutros-Ghali; Albright convinced the council it should be Annan. He was elected to a second term in 2001.

Not long after Annan made it to the top, questions surfaced about possible mistakes he had made during the Rwanda crisis. In response, he commissioned an independent probe of his actions and those of the U.N. generally. The commission, headed by former Swedish Prime Minister Ingvar Carlsson, concluded in December 1999 that Annan and his peacekeeping staff had failed to heed warnings of an impending massacre, and it also faulted the United States and other Security Council members for doing too little once the killings began. Annan said he accepted the report's findings, saying: "On behalf of the United Nations, I acknowledge this failure and express my deep remorse."

WE ARRIVED IN DURBAN, an industrial city on the Indian Ocean coast of South Africa, for a summit meeting of the Organization of African Unity (OAU), a body whose direction Annan has helped shape by the force of his moral authority. South Africa is the continent's main success story. Its transformation over the past decade from a racist, undemocratic, oppressive state to a multiethnic democracy dominated by an African majority has been remarkably smooth. The nation has enormous problems—poverty, AIDS, crime, stubborn pockets of racism—but the cruel, shameful products of apartheid have disappeared, from the "whites" and "non-whites" labels on benches to segregated taxis, from prisons for political dissidents to "pass" laws restricting black Africans' travels.

The gathering of the heads of 53 OAU delegations took place amid buoyant signs of goodwill, at least compared with my last visit in South Africa 35 years ago. This time, at the restaurant in my hotel I was served by white, black and South Asian waiters, and none seemed to pull rank on the others; a white officer led the military band that showed up at the conference's festivities, but most of the musicians were black (except, inexplicably, for the tuba section, which was white).

The OAU, which was founded in 1963, was abolishing itself during four days of meetings and reconstituting as the

African Union, patterned somewhat after the European Union. In 1997, during his first year as U.N. Secretary-General, Annan had appealed to leaders at an OAU summit in Harare, Zimbabwe, not to grant membership to anyone who came to power through the barrel of a gun. "That was a bold speech," Salim Ahmed Salim, the OAU Secretary-General, told him afterward. "You are the only one who can make this speech and get out of here without being lynched."

The OAU adopted Annan's idea and drew up a charter for the African Union that prohibits membership to dictators who come to power through a coup or other unconstitutional means. The union will also have the authority to intervene in any country to halt war crimes, genocide and crimes against humanity. But, as Annan warned at the summit's opening session, "Let us not imagine that, once proclaimed, our Union will become a reality without further effort."

Behind closed doors, Annan met with a parade of leaders. Presidents Paul Kagame of Rwanda and Laurent Kabila of Congo came to discuss the causes of the bloody feuding between their nations. Annan did his best to defuse a confrontation between President Kumba Yala of Guinea-Bissau, wearing a suit and a red stocking cap, and President Yahya Jammeh of Gambia, wearing a gleaming white flowing robe and an Islamic skullcap. Their two countries are tiny; neither can boast a population of as much as 1.5 million. But Yala accused Jammeh of training dissidents in Gambia and sending them off to Guinea-Bissau to bring down the government—an accusation Jammeh denied.

Annan suggested to the Guinea-Bissau president that he accept Jammeh's offer to allow representatives of Guinea-Bissau into his country to investigate the claim. Annan also coaxed the two presidents to agree to sign a Memorandum of Understanding. The presidents hugged each other in front of press photographers outside the Secretary-General's makeshift office at the convention center. But neither president showed up later for the signing. "Africa is in trouble with these men in charge," muttered an African official on Annan's staff.

Also at the conference was Nelson Mandela, and when the 1993 Nobel Peace laureate stopped by to visit with Annan, Annan graciously called in the three journalists on the U.N. trip—Carola Hoyos of the *Financial Times*, Shawcross and me. Mandela's very presence commands special respect. He endured 28 years of imprisonment, inspired the struggle against apartheid, preached reconciliation upon his release, helped forge a democratic government, governed for five years, until 1999, as the first South African president ever elected by universal suffrage, and then, in a rare show of discretion, stepped down from power when his term ended.

My face must have been frozen in awe. Mandela, after chatting with Shawcross about his father, former British Attorney General Hartley Shawcross, now almost 101 years old, turned to me, smiled and said, "Why do you look so aggressive?" Then he burst out laughing. I had no reply except to laugh with him. The journalists stepped out of the suite, leaving Mandela and Annan in conversation. "There are only two people with great moral stature in the world today," Shawcross said, pointing in their direction. "And both are Africans with gray hair."

SUDAN HAS BEEN AT CIVIL WAR for most of its 47 years of independence, and Annan alighted in the capital of Khartoum to encourage what seemed like a promising peace process. The southern Sudanese, who are Christian and animist, have been in rebellion against a government historically dominated by northern Muslims. The war has ravaged the south and forced the northern-dominated government to spend fortunes on munitions. Peace talks involving the two sides, ongoing in Kenya, were moving toward some kind of solution. "From Ghana to the Sudan," Annan said in a speech at the airport, "we did not fight for independence to have starvation. Those of us who fought for independence, all of us, shouted one word, Freedom. Now there are many more people hungry than ever before. So where is our freedom? Is a hungry man free?"

For the first time on the trip, Annan betrayed annoyance. He was scheduled the next morning to tour a nearby war refugee camp that U.N. officials in Khartoum said was a showcase. "So why am I going?" Annan asked pointedly. But it was too late to change itineraries, and the next morning we drove ten miles from Khartoum to the camp, our motorcade lifting swirls of sand in the desert heat.

"My roots are deeply, deeply African," says Annan (with Nelson Mandela, 84, the former president of South Africa, in Durban last July).

ESKINDER DEBEBE/UN PHOTO

The government-run camp was set up in 1988 to house southern Sudanese fleeing the war. The refugees, who wore Western-style shirts and trousers, looked markedly different from the northerners of Khartoum and Omdurman, who dress in turbans and loose white robes known as djellabas. The camp included a Roman Catholic church but no mosque. Chanting refugees carried signs that proclaimed in English, "Stop War," "We need Development," "No for War, Yes for Peace." Refugee leaders, representing different tribes, addressed the Secretary-General, calling for peace, invariably ending their orations with the slogan, "*Sawa Sawa*." That meant, we were told, something like "We are all together."

Annan toured a spotless medical clinic and visited a primary school in the refugee camp, conversing with the young

Credited with energizing the U.N., Annan (at Yankee Stadium in 1999) has also voiced "remorse" for its failings.

girls there. At the church, he addressed refugees: "Everywhere I have gone, I have the sense that the people want peace. I think the leaders owe it to you, and you owe it to yourselves, and if we all work together and put the enmities of the past behind us, we should be able to bring peace to this land. Sawa Sawa." It's hard to gauge what Annan's presence in that remote outpost might accomplish, but he cannot resist preaching peace whenever he can.

Our last stop was Abuja, the new capital of Nigeria. It is a contrived city, like Brasília in Brazil, with massive new buildings and wide boulevards. It lacks the confusing twisted streets and crowding and turmoil of Lagos, the former capital, a bustling port 300 miles to the southwest. (The northern-dominated government moved the capital north to Abuja in 1991.) The Secretary-General's children, 34-year-old Ama Annan and 29-year-old Kojo Annan had traveled to Abuja to see him. (Annan and their Nigerian mother, Titi Alakija, divorced in the late 1970s.) Ama and Kojo live in Lagos, where they work in the shipping business. "Lagos is very exciting," Ama said. "I love it. There is nothing happening here," she added, referring to Abuja.

The Secretary-General had gone to Nigeria to show support for the nascent democracy of Africa's most populous country. At a breakfast for Annan put on by President Olusegun Obasanjo at the fortresslike official residence, the president sat at the end of a long marble table with a dozen members of his cabinet, the Secretary-General and his entourage. The breakfast menu was partly British, with scrambled eggs, sausages and baked beans, but mostly Nigerian, featuring *akaras* (savories made from black-eyed peas), *ogi* (a corn porridge), fried plantains, fried yams and beef stew. Annan once again spoke of the need for democracy in Africa. "In Asia," he said, "Indonesia collapsed because it did not have a democratic base. It was built on sand."

At a news conference, a Nigerian reporter asked the Secretary-General if he would support Obasanjo's bid for reelection in 2003. Annan laughed. "I don't travel around the world to cause excitement," he said.

En route to New York, we stopped to refuel on the island of Santa Maria in the Portuguese Azores. In the airport's small VIP lounge was a guest book filled with the signatures—and testimonials, some quite florid—of world leaders, including Fidel Castro. President Hugo Chavez of Venezuela, for instance, saluted the "warm, sympathetic, marvelous, generous people of the Azores who shared an Iberian heritage" with the Venezuelan people and signed his name in bold script, adding, "President of the Bolivarian Republic of Venezuela."

A Portuguese official urged the Secretary-General to leave his mark. In his understated way, he wrote "Kofi Annan" in a neat, clear hand, adorning his signature with nothing more than tiny letters: "U.N." ○

TIMOTHY A. CLARY / AFP / CORBIS

SHADOW WOLVES

An all-Indian Customs unit—possibly the world's best trackers—uses time-honored techniques to pursue smugglers along a remote stretch of the U.S.–Mexico border

BY MARK WHEELER

PHOTOGRAPHS BY SCOTT S. WARREN

Officer Bryan Nez (sitting on 477 pounds of confiscated marijuana) and his 20 fellow Shadow Wolves intercept more illegal drugs than any other Customs unit in Arizona.

ON A BRICK-OVEN HOT morning somewhere southwest of Tucson, Arizona, U.S. Customs patrol officer Bryan Nez holds up a hand in caution. Dead ahead lies a heavy thicket, an ideal spot for an ambush by drug smugglers. Something has rousted a coyote, which lopes away. Nez keeps his M16 trained on the bushes.

"Down, now," he whispers. We crouch on the hot, sandy desert floor. My heart is pounding, and I fully expect smugglers to step out of the bushes with guns drawn. Instead, Nez whispers, "Hear it?" I can't at first, but then I detect a faint buzzing. In seconds, a dark cloud of insects swarms by not a dozen feet from us. "Probably killer bees," says Nez, getting up and moseying on. False alarm.

Nasty insects seem the least of our problems. The temperature will soon top 107 degrees. We've been out on foot for an hour tracking drug smugglers, and large moon-shaped sweat stains form under the arms of Nez's camouflage fatigues. He carries a Glock 9-millimeter pistol in a vest along with a radio, a GPS receiver and extra ammunition clips. On his back is a camel pack, or canteen, containing water; Nez will wrestle with heat cramps all day.

But the 50-year-old patrol officer doesn't have time to think about that. We're following the fresh tracks of a group of suspected smugglers he believes have brought bales of marijuana from Mexico into Arizona's Tohono O'odham Nation reservation.

A full-blooded Navajo, Nez belongs to an all-Indian Customs unit, nicknamed the Shadow Wolves, that patrols the reservation. The unit, which numbers 21 agents, was established in 1972 by an act of Congress. (It has recently become part of the Department of Homeland Security.) "The name Shadow Wolves refers to the way we hunt, like a wolf pack," says Nez, a 14-year veteran who joined the U.S. Customs Patrol Office of Investigation in 1988 after a stint as an officer with the Bureau of Indian Affairs and the Navajo Police Department. "If one wolf finds prey, it will call in the rest of the pack." What makes the Shadow Wolves unique is its modus operandi. Rather than relying solely on high-tech gadgetry—night-vision goggles or motion sensors buried in the ground—members of this unit "cut for sign." "Sign" is physical evidence—footprints, a dangling thread, a broken twig, a discarded piece of clothing, or tire tracks. "Cutting" is searching for sign or analyzing it once it's found.

Nez relies on skills he learned growing up on the Navajo Nation reservation in northern Arizona, and he cuts sign like other people read paperbacks. Between October 2001 and October 2002, the Shadow Wolves seized 108,000 pounds of illegal drugs, nearly half of all the drugs intercepted by Customs in Arizona. The group has also been invited to Latvia, Lithuania, Estonia, Kazakstan and Uzbekistan to help train border guards, customs officials and police in tracking would-be smugglers of chemical, biological and nuclear weapons.

At home, the Shadow Wolves unit is responsible for the 76 miles of border that the reservation shares with Mexico. It's a difficult task for fewer than two dozen officers, and the

Shadow Wolves officers (such as Scout and Nez, below) battle heatstroke and cramps in summer temperatures that can exceed 117 degrees. They often give some of their water to the groups of undocumented aliens (bottom) that they run into almost daily while tracking drug smugglers.

MARK WHEELER wrote about California's water wars in the October issue. SCOTT S. WARREN wrote and photographed 100 Classic Hikes in Arizona *(Mountaineers Books, 2000).*

Over the past decade, increasingly sophisticated Mexican drug traffickers have made the work of the Shadow Wolves (officer Nez, above) harder by smuggling smaller but more numerous drug loads across the border in a process known as shotgunning.

events of September 11 have only made things worse. Beefed-up security at Arizona's designated border crossings—Nogales and Sasabee in the east, tiny Lukeville in the west—has pushed smugglers, both on foot and in trucks, toward the remote and less guarded desert in between. Now, day and night, groups of eight to ten men move north from Mexico toward the insatiable U.S. market, each individual carrying upwards of 40 pounds of marijuana on his back. Funded by Mexican drug lords, the smugglers are often better equipped, better funded and more numerous than the Shadow Wolves, with lookouts on neighboring mountains armed with night-vision goggles, cell phones and radios capable of delivering encrypted messages to direct smugglers away from law enforcement vehicles.

Violence between pursuers and pursued has been minimal. Until recently. In April 2002, a group of officers was making an arrest near Ajo when a smuggler tried to run down Shadow Wolves agent Curtis Heim with his truck. Heim, only slightly injured, shot the smuggler, who survived the wound but was arrested, his drugs confiscated. (That bust brought in a whopping 8,500 pounds of marijuana, which could have sold on the streets for an estimated $8.5 million.) This past August, Kris Eggle, a 28-year-old park ranger at the Organ Pipe Cactus National Monument, just to the west of the reservation, was shot and killed by a Mexican fugitive he was pursuing.

TODAY'S HUNT GOT UNDER WAY at 6 a.m., two hours after Nez's shift began, following a radio call from fellow Shadow Wolf Dave Scout, 29, an Oglala Sioux who had discovered fresh tracks eight to ten miles from the unit's headquarters in the Indian village of Sells while patrolling in his truck.

But now, at midmorning, and an hour after our encounter with the bees, we are still following the trail. The desert stretches endlessly in every direction. Paloverde trees, mesquite and dozens of cactus species, especially saguaro, barrel and prickly pear, dot the steep mountains and hills, plains and valleys. At 2.8 million acres, southern Arizona's Tohono O'odham Nation reservation (pop. 11,000) is four-fifths the size of Connecticut. There are no cities on it, only small and widely scattered villages.

Nez stops and points to a patch of desert near my foot. "See that square shape and those fine lines you're almost standing on?" he asks, directing my attention to some nearly indeterminate scratches in the sand. I hastily step back. "That's where one of them took a break. That mark is where he rested a bale of dope. I'm guessing we're a couple of hours

behind them, because you can see that spot is in the sun now. This guy would have been sitting in the shade."

The tracks continue north into an open area, cross a powdery road, then head off toward another thicket. Nez observes that the smugglers probably crossed here during the night; otherwise they would have avoided the road or at least used a branch to cover their tracks.

Fortunately, they didn't. "There's our friend Bear Claw," Nez says, referring to a man they've been tracking whose footprint looks like a bear's. "And over there? See the carpet shine?" To hide their tracks, smugglers will tie strips of carpet around their feet, which leaves a slight sheen on the desert floor. I can just barely see what he's talking about.

These footprints are fresh, says Nez. "We look for fine, sharp edges on the imprint made by the bottom of the shoe, and whether the wall is starting to crumble." Tracks of animals, bugs or birds on top indicate a print has been there awhile. But "if the animal or insect track is obscured by a footprint as it is here, then the tracks are recent." Also, says Nez, after a few hours "there would be twigs or bits of leaves in them."

He moves to another set of tracks. "This one is a female UDA," he says, using the acronym for undocumented alien, a person who entered the country illegally. Nez has deduced the hiker's sex and status from the lightness of the print (the person is not carrying a bale) and its shape. "The footprint is more narrow, and there are more steps because she has a shorter step than the men," he explains.

UDA tracks are more numerous than smugglers'. In the first place, there are a lot more of them. Then, too, if they get separated from their guides or are abandoned by them, UDAs can wander in circles for miles, lost and looking for water. In summer, when temperatures can hit 118 degrees, many die. Between January and October 2002, seventy-six UDAs died from the heat in southern Arizona alone. Shadow Wolves officers carry extra water and food for their almost daily encounters with them. (When they do meet up with UDAs, they call the Border Patrol or just let them go.)

Cutting for Sign

The smallest clues left behind by a column of backpacking drug smugglers can reveal a wealth of information. Clockwise from lower left: A footprint free of leaves or other desert chaff is most likely fresh; footprints with a "kickout," a spray of dirt created by a deep heel plant, indicate that the backpacker carries a heavy load; a slight sheen left on desert sand suggests an attempt to obscure tracks by tying carpet to the soles of boots; flattened vegetation, as well as damage to tree branches and the spines of saguaro cactus (center), reveals the direction in which a backpacker is traveling; a low-mounted light puts tracks in relief and illuminates a thread snagged from a burlap sack that may contain drugs.

Drug lords will pay locals between $400 and $1,200 to carry burlap sacks, filled with up to 45 pounds of marijuana, across the border, where Shadow Wolves officers (like Satepauhoodle and Garcia, above) are often waiting.

We push through some scrub, and Nez points to a broken bush I hadn't noticed. "Someone stepped on it. Look at the direction it's bent." He steps on the bush, and sure enough, it points like an arrow in the same direction as the tracks.

A few minutes later, Nez draws my attention to a branch of a mesquite tree. Squinting, I finally make out a single, dangling thread. "That's a fiber from the sugar sack they use to carry the dope in," he says. "And here," he points a foot farther, "see where this branch has snapped? One of these guys plowed through here. Look at the break. See how the wood inside is fresh and moist?" As a broken twig ages, the wood darkens and the sap thickens. The smugglers cannot be far ahead.

Now Nez pays even closer attention to the tracks. He is looking for "shuffle" marks, which would show that the quarry knows they are being pursued. "Shuffle marks indicate that they've stopped to turn around and look behind them," says Nez. "That's when you move off the tracks and come up the side of them."

Thirty minutes later, we find ourselves at the base of a steep incline. At this point, Scout drives up in his pickup truck. In contrast to Nez's easygoing manner, Scout looks serious and taciturn. He says he thinks the smugglers have holed up somewhere up the hill, waiting for dark before they move. Scout radios Al Estrada, his supervisor in Sells, who says he'll send two more Shadow Wolves—Sloan Satepauhoodle, a Kiowa from Oklahoma (and one of only two women in the unit), and Jason Garcia, an O'odham who grew up here.

An hour later, Satepauhoodle and Garcia show up in a pickup, unload a pair of all-terrain vehicles (ATVs) and head up the hill. Scout and Nez drive to the other side of the hill and resume tracking.

Over the next two hours, neither Scout, Nez nor the officers in the ATVs pick up even a hint of the smugglers' trail. It is now past 1 p.m., an hour after the end of the agents' shift. Satepauhoodle and Garcia pack up their ATVs and drive home. But Nez is fidgety. "I just have a feeling they're up there," he says to no one in particular. Scout and Nez agree to go back to the ridge where the trail was lost and try again.

The slope of the ridge consists mostly of loose rock and small pebbles, and Nez and Scout notice some faintly discolored stones. These were probably turned over by a passing foot, revealing a damp, slightly darker side.

Thirty minutes later, Nez holds up a hand. We freeze. He and Scout creep forward, firearms at the ready.

"We found the dope," Nez calls out, wiping his face with his handkerchief and summoning me to join him next to a large mesquite tree. I don't see any drugs. Nez tells me to look more closely. Under the tree, obscured by broken branches and hidden by shadow, I make out a number of bales. The agents on the ATVs had driven right by this spot. "Smell it?" Nez asks, smiling. Oh, yeah.

A few yards away, more bales are stacked under another tree. I help Nez and Scout pull them into a clearing. There are nine in all, each wrapped in plastic sheets and duct tape, and stuffed inside a burlap sugar sack to form a three- by four-foot package. To carry the drugs, the smugglers had rolled empty sacks into rudimentary shoulder straps and fastened them to the bales to make crude backpacks. Scout calls in GPS coordinates to the office in Sells.

We sit on the bales and wait for reinforcements to come take them, and us, back to Sells. I ask Nez if he gets frustrated by the job. He answers no. "I like the challenge. But mainly I think about the young kids," he says. "It's satisfying to know that we are keeping at least some of the drugs from getting onto the streets and into the hands of children."

As we are talking, Scout leaps up and sprints into some nearby bushes, his gun drawn. Nez jumps up and races after him. I see a quick flash of a white T-shirt and watch as Scout and Nez disappear into the mesquite and greasewood.

Minutes later, the pair returns. Two smugglers had stayed behind with the drugs. Nez and Scout had to let them go—the chances of a violent encounter were too high in the thick foliage, and Shadow Wolves officers are under orders to remain with any drugs their unit turns up.

Twenty minutes later, Nez points to a spot about 1,000 feet straight up, at the top of the ridge. The two smugglers are looking down at us. They scramble over the top and disappear.

"Those guys are starting to annoy me," says Nez.

"Yeah," Scout agrees. "I *want* them." He makes a call on his radio and reads out some coordinates. In 15 minutes, we hear the pulsing thwacks of a Blackhawk helicopter, which has flown out from Tucson and now heads over to the other side of the hill.

After several minutes, the helicopter disappears behind the ridge. We learn by radio that the two men have been caught and taken to headquarters in Sells.

"These guys were pretty beat," says David Gasho, an officer on board. "They didn't even try to hide." The helicopter had landed on a flat patch of desert. The Customs officers inside the helicopter, Gasho relates, had simply waited for the two men to reach them. They had offered no resistance.

The men claim not to be smugglers, mere UDAs who got scared and ran when they saw the officers. But interrogated separately back in Sells an hour later, they quickly confess. The men, ages 24 and 22, say they'd been hired right off the street in Caborca, Mexico, some 60 miles south of the border, and had jumped at the chance to make $800 in cash for a few days' work—a bonanza considering that top pay at the local asparagus plant is $20 a week.

Because the men confessed, says an O'odham police department sergeant, they'll be prosecuted at the federal court in Tucson. As first-time offenders, they'll probably get ten months to one and a half years in a federal prison. Then they'll be sent back to Mexico. Chances are high that the seven smugglers who got away, including Bear Claw, will be back humping bales of marijuana in a matter of days.

Nez and Scout look beat, but they are smiling. It has been a good day, better than most. The officers can go for weeks at a time without making an arrest. Rene Andreu, the former resident agent in charge at the Sells office, speculates that Shadow Wolves capture no more than 10 percent of the drugs coming into the reservation. "In recent years, we've averaged about 60,000 pounds a year," says Andreu. They all agree that they need greater resources.

It will take more than a few reinforcements, however, to have any real effect on drug traffic. The Shadow Wolves know this dismal fact all too well. Still, without their dedication and that of other Customs officials, smugglers would be bringing drugs over the border, as one officer put it, "in caravans." ○

BOTTOM: U.S. CUSTOMS SERVICE COLLECTION

Once Shadow Wolves officers locate suspected smugglers, they often call in a special aviation team (left, top), which flies from Tucson on a Blackhawk helicopter, to help them make arrests. Last year this strategy helped contribute to the unit's more than 400 apprehensions. The officers caught the two men (left) carrying several hundred pounds of drugs on a mule.

Amazing Grace

A new book featuring many never-before-seen photographs of the Great Depression testifies to the resilience of the American spirit

BY OWEN EDWARDS

IT IS THE NATURE OF PHOTOGRAPHY—and a tribute to its power—that a few images can so capture the eye and dominate the memory that they form our sense of an event or era. When we think of World War II in the Pacific, we may see in our mind's eye Joe Rosenthal's picture of Marines raising the flag on Iwo Jima. When we think of the Vietnam War era, images of a little girl burned by napalm or a young woman kneeling beside the body of a fallen student at Kent State may appear to us instantly. And when we think of the Great Depression, we almost invariably conjure up Dorothea Lange's portrait of a migrant mother or Margaret Bourke-White's drab line of flood victims waiting for temporary government relief in front of a billboard advertising the good life. These last two, and similarly dark, dramatic photographs made in the tumultuous 1930s, have forever fixed in our minds a relentlessly bleak impression of a time that fewer and fewer Americans actually lived through.

PHOTOGRAPHY HAS a power beyond the single, riveting image, however. It has sweep, and as a protean and cumulative medium, it provides an epic narrative that, like Homer's great poems, scales the heights as well as plumbs the depths of the human experience. Any given picture may or may not be worth a thousand words (depending, of course, on the quality of the words . . . and the picture). But as an eyewitness to history, a constellation of photographs can ring with an eloquence equal to literature. The photographic archives of the Farm Security Administration, the government organization created by President Franklin Roosevelt to assist in the crisis in the nation's agricultural base, are vast, and hold vivid reminders of one of America's hardest decades: stark black-and-white pictures of desperate dust bowl farmers, shantytown families, misery and mass migration. But the photographers of the FSA, working under the demanding leadership of Roy Stryker, were some of the most talented men and women ever to wield a camera. They saw everything, the full spectrum of faces and places that was America in those days. Now, in a revelatory and exceptional book published last month by W. W.

Beneath a Montana mountain backdrop, a high school band—with an all-girl drum corps—marches proudly through Butte in the summer of 1939. *(PHOTO BY ARTHUR ROTHSTEIN)*

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Norton—*Long Time Coming: A Photographic Portrait of America, 1935-1943*—historian Michael Lesy gleans from the FSA archives 410 images that vastly broaden our view of the eight momentous years that saw the nation rise out of economic collapse and, with a strength born of adversity, go to war.

LESY, 57, WHO TEACHES literary journalism at Hampshire College in Amherst, Massachusetts, is the author of eight previous books, including the critically acclaimed *Wisconsin Death Trip*, *Real Life: Louisville in the Twenties* and *Bearing Witness: A Photographic Chronicle of American Life, 1860-1945*. He dares readers to reconsider history. "What I want my books to do is get people to somersault back in time," he says. Lesy takes the raw material of historical archives and reassembles it into a coherent version of the past. A reader dives into it and gets to visit awhile, to walk around and peer into windows, to get to know the local barber, hop a train and go to a picnic or two. But Lesy's approach is also "subversive," to use his own characterization. "I try to use other people's photographs to create a counter-narrative. It's what I call the 'both-and' approach. I want people to look again, and think again, and to realize that things were both worse than you can imagine and better than you can imagine. I try to make paradox visible." As *Long Time Coming* shows, the FSA photographs indeed reveal the best of times along with the worst. "I've been looking at some of these pictures since I was 18 or 19, almost 40 years now, and sometimes you can feel that you're just soaked with them." But what helped Lesy find his counter-narrative in this instance is that most of the archive had been digitized, so thousands of never-printed pictures can now be viewed on computer screens. "I was able to see 2,000 Walker Evans pictures that I'd never seen before," Lesy says, "and there were a couple dozen of them that a collector would kill for."

With the possible exception of the hardy band of photographers who worked for Mathew Brady during the Civil War, the 44 men and women who worked for Roy Stryker were the most talented documentarists ever assembled for a single purpose, particularly the 16 stalwarts who did most of the work shown in the book. Some of them, such as Walker Evans and Dorothea Lange, became world famous for their FSA work. Others, notably Russell Lee, Jack Delano, Arthur Rothstein, Marion Post Wolcott and John Vachon, are now known mostly to curators and connoisseurs of documentary photography. Another member of the FSA team, Carl Mydans, went on to become a mainstay of *Life* magazine's globe-trotting crew, and yet another, Ben Shahn, earned fame as a painter.

Individually, and as a loosely knit team, they accomplished their primary mission—to record the plight of farmers suffering the blows of drought, dust, deprivation and foreclosure and the ripples of woe that flowed outward

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OWEN EDWARDS has written about photography for, among others, the New York Times Magazine *and* American Photographer.

In front of a Windsor Locks, Connecticut, movie theater, a symbiotic magazine stand displays print homages to the silver screen: *Photoplay*, *Film Fun* and *Liberty*, plus, of course—*True Romances*. *(RUSSELL LEE, 1939)*

In the golden age of train travel, the sleek Burlington *Zephyr*, pulling into East Dubuque, Illinois, promised the ultimate in romance and luxury. *(JOHN VACHON, 1940)*

A game of dominoes in the shade of a drugstore awning provides a dreamy afternoon intermezzo for the businessmen of a town in the Mississippi Delta. *(MARION POST WOLCOTT, 1939)*

At an all-day community sing in the aptly named Pie Town, New Mexico, a potluck dinner waits enticingly for the blessing to lead to the wonderful words, "Let's eat!" *(RUSSELL LEE, 1940)*

An idealized couple enamored of Iron City beer seem to toast the steelworkers' children at play on a July day in Pittsburgh, Pennsylvania. *(ARTHUR ROTHSTEIN, 1938)*

War was raging in Europe and hard times still stalked America, but for these young girls in Chicago a game of ring-around-the-rosy was what mattered in the here and now. *(EDWIN ROSSKAM, 1941)*

Black-and-white film cannot disguise the fact that this barefoot boy with bike in Crowley, Louisiana, has decorated his wheels with crepe paper in red, white and blue. *(RUSSELL LEE, 1936)*

from their personal catastrophes. But as artists, seers and seekers, they also turned their lenses on life as it was lived in cities, at country fairs and carnivals, at church picnics, Fourth of July parades, public swimming pools and movie theaters. The scope of their vision reminds us that even in the grip of hard times, people are still human, with the full range of human needs (not the least of which is to have a high old time); that children in the most anxious circumstances will still play; that a woman unsure of what tomorrow will bring can still put on her best dress and smile her most hopeful smile. *Long Time Coming* does not turn away from the sorrow beheld by the FSA photographers, but it adds dimensions of joy and vitality that give us a fuller sense of how day-to-day life went on—marching right up Main Street and into the future—despite uncertainty and dread. Franklin Roosevelt famously insisted in 1933 that "the only thing we have to fear is fear itself," and many of the people in these photographs seem unafraid, indeed, to get on with life. There is a vigor here that prefigures the resolve that would hew through Fascism and, only a few years later, make the United States the most powerful nation on earth.

THE WORLD OF THESE photographs is the world into which I was born in 1937. It is a world that rushes back as I look at them, a world of dignified adults and carefree children, of men in hats and women in flower-print dresses or dark winter coats, of big cars, mostly black, and Christmases, often white, of billboards for Iron City beer, Lucky Strike ("It's toasted"), Mail Pouch tobacco, Moxie soda, Dr. Pepper and, of course, Coca-Cola. In my memory, everyone lived in small towns, and small towns were boundless worlds; children walked home from school alone with their heads in the clouds; and everyone seemed to know everyone else. Movie theaters were called the Rialto or the Strand, and showed Saturday matinees with cliff-hanger endings to bring us back the next week. Hometowns aroused near-tribal pride; how much greater Westfield was, in every way, than Northfield just up the road. The Thanksgiving weekend football game with the traditional rival was as all-consuming as that little set-to at Waterloo. Horses still pulled the junk man's clanking cart, and a Greek, inevitably called "Gus," fried hamburgers in a diner the men all called the Dog Wagon. Lesy's selection of pictures, a Proustian madeleine for me, show people reading on front porches and gossiping outside rooming houses, boys in overalls playing cowboys and Indians, men reverently saluting the flag with their hats over their hearts, newsstands laden with *Photoplay*, *Click*, *True Romances* and newspapers whose headlines tell of Rommel's advances across Egypt. The message of these photographs is, simply, that however bad things were, Americans persevered; that even while people suffer, they also work, eat, laugh, live life. Here is an America long gone but well worth remembering, a country full of doubt and hardship, but also brimming with pluck, passion, determination and delight. ○

SEA SEARCHERS

Scientists launch a $1 billion effort to track marine life worldwide

BY JEFF WHEELWRIGHT

Researchers equip Pacific Ocean tuna (Southern bluefin, right) with a sensor (above) that can record the animals' travels over thousands of miles.

"THIS IS HARDER than it should be," Barbara Block muttered as she leaned over the gasping fish. Blood dripped from her left hand where the tuna's teeth had slashed her. Though covered from neck to toe in a neoprene wet suit, she shivered.

Block, a 44-year-old marine biologist, was in a skiff in Monterey Bay, California, offshore the facility she codirects, the Tuna Research and Conservation Center. A pearly light shone through a lifting layer of fog. In a sling in the center of the boat, a pair of four-foot-long bluefin tuna lay side by side. "Keep the hose on that one," she told an associate, and he trained a stream of aerated water into its mouth and thus through its gills.

She picked up a tool that resembles a spear. Attached to one end was an electronic device containing a sensor and a transmitter. It looks like a wireless microphone and can beam a signal to an orbiting satellite,

"Once you've interacted with [tuna], you have a passion for the animal," says Block (center, helping lift a sling that holds one).

conveying the transmitter's whereabouts on the globe. Block bent over the animal and stuck the "satellite tag" into the fish just below the dorsal fin. The researchers lifted a sling holding the fish and then lowered it over the side of the boat and into the water. "One, two, three!" they chanted, and pushed the tuna free. For a minute the tuna appeared to swim woozily near the surface, the tag bobbing above its back like a mechanical pilot fish, before disappearing into the depths.

In the coming months, the device would make a daily record of the tuna's travels, then, after roughly six months, detach itself from the animal, float to the surface and upload the data to a satellite. One of the fish that Block and her coworkers tagged that November day swam some 1,300 miles over the next several months, at depths of up to 1,000 feet, and was last detected in March near Magdalena Bay, Mexico, about 200 miles north of Cabo San Lucas.

The animal played a bit part in an unprecedented global biological research project known as the Census of Marine Life, an estimated $1 billion, ten-year effort by scientists in at least 40 nations to identify, characterize and track the movements of scores of life-forms. Those include a wide range of animals other than bluefin tuna, from whales and turtles to sea-bottom bloodworms and albatrosses. Some researchers will scuba dive. Others will send robots to the ocean floor. And still others will soar above the sea's surface in aircraft equipped with laser-based radar devices that can penetrate the ocean and monitor, among other variables, the locations of schools of fish. Researchers also plan to study historical records to gain a view of ocean life in the past.

Assessing the status of marine life around the world has gained urgency in this era of coastal pollution and alarming overfishing. Policymakers who set ocean-fishing quotas and pollution limits are working with outmoded or incomplete data, the census researchers say. They argue that the project is needed because the oceans, which make up 90 percent of the Earth's biosphere, "are largely unexplored, and the life in them largely undescribed."

Block's study of Pacific bluefin is only part of the larger census project, but it highlights how the researchers hope to gain a detailed picture of not

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JEFF WHEELWRIGHT, based in California, is author of the book Degrees of Disaster: Prince William Sound: How Nature Reels and Rebounds.

GERRY GROPP; P. 56 GERRY GROPP; PP. 56, 57 MIKE PARRY / MINDEN PICTURES

only where the creatures go but also the watery world they inhabit. "Let's take the animals we know that can carry the electronics and get them to sample the oceans for us," Block says. "Let's use the organism as a way to get a window into the world it lives in—to get the organism's-eye view."

After releasing the tagged fish, Block and her associates motored back to the tuna research center, where a group of graduate students was matching wits with two dozen bluefin swimming around a 40-foot-diameter tank. The center is world famous for its studies of captive bluefin tuna, most of which are caught off the Southern California coast and trucked to the facility. Tuna can survive in the tanks for several years. The water in the tanks turns over every 70 minutes, and its temperature, acidity and oxygen content are carefully regulated.

The water in the tank had been drawn down to hip level, and the graduate students, wearing wet suits, maneuvered a vinyl mesh corral to capture the circling fish. Once the students caught a fish, they guided it into a sling, which was hoisted out of the water, transferred to a forklift and rushed to the dock. Block trotted alongside the animal like an emergency room physician tending to a patient on a gurney. She jumped into the skiff, and the crew raced out to the bay to release the fish.

Block is among the world's leading experts on warm-blooded ocean fish—tuna, mackerel sharks and billfishes such as marlin. She has authored or coauthored 60 studies on their physiology, behavior, genetics and ecology and has pioneered methods for keeping tuna in captivity. In 1996, she received a MacArthur Foundation grant, and she poured most of the $250,000 so-

After Block and coworkers attach a sensor to a captive tuna in the research center, they rush the fish into a boat and motor out to Monterey Bay, where they check on the animal and the device (top), lower it into the water (middle) and let it go (bottom).

GERRY GROPP (3)

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Scientists tagged squid in Mexico and posted a $50 bounty for each tag returned.

called genius award into the research center at Monterey Bay.

Tuna are among the most economically important creatures in the sea. Worldwide, the tuna fishing and processing industry amounts to some $3 billion annually. In the United States, people consume more than 900 million pounds of canned tuna a year. It troubles experts that so little is known about the behavior of tuna, never mind less commercially valuable creatures. "We can go to Mars and the Moon," Block says, "but we haven't had a way to see where the ocean animals go."

TUNA DRAW HEAT from the action of their own muscles. That gives the fish more power, according to Block's laboratory experiments, but it also means they need lots of oxygen: water must flow ceaselessly through their gills. If they don't swim, they die. In the wild, a bluefin grows rapidly. If it lives long enough, it might top 1,000 pounds. Yet it's a marvel of hydrodynamics, says Randy Kochevar, a biologist at the Monterey tuna center and a colleague of Block's. A bluefin can sprint 40 miles an hour and cruise 150 miles a day. The giant Atlantic bluefin, which Block has studied even more extensively than the Pacific variety, may survive 25 years or longer and reach 1,500 pounds.

The Pacific bluefin is one of the world's most prized fishes. Sushi lovers pay a premium for its fatty meat. At Tokyo auctions, dealers routinely spend $10,000 for a fish. Though bluefin are caught with hook and line, in commercial operations they are typically captured with a purse seine, an enormous net that encircles a school and entraps the fish when cinched at the bottom. A large school in the eastern Pacific can consist of 2,000 fish.

Unlike other tuna species, the Pacific bluefin appears to be holding its own in the face of fishing pressure, although population data from the Pacific, which Block calls "that big blank slate," are limited. As Chuck Farwell, codirector of the Monterey tuna center, remarked, "If there were a problem, we wouldn't know it."

In the Atlantic Ocean, the problem is worse, but the data, thanks largely to Block and coworkers, are better. Each winter since 1996 she has chartered fishing boats to survey tuna off the North Carolina coast. She follows the animals with satellite tags or another type of sensor, known to the scientists as an archival tag, which she sews into the abdomen of a large tuna. It, too, records the fish's movements and the ocean temperatures and depths, but furnishes researchers with more data—provided that whoever catches the fish is willing to return the device to the researchers for decoding. (It's plastered with a return address and the promise of a $1,000 reward.)

Sitting in her office at the tuna research center, a joint venture between Stanford University and the Monterey Bay Aquarium, Block, a Stanford professor of biological sciences, pushed an archival tag across her desk. It looks like a metal cigarette lighter with a short probe and is surgically implanted in a fish's belly. The probe pierces the skin and measures the water temperature and pressure every two minutes. The pressure indicates the depth at which the tuna is swimming. A clock and a light-sensitive diode establish the time of the setting and rising sun, which can be converted to latitude and longitude. Thus, the scientists can reckon a tuna's position on the globe once a day within 60 miles.

Block took out a map showing the distribution of plankton in the North Pacific. Plankton, a general term for tiny drifting plant and animal life, are at or near the bottom of the food chain, and all sorts of marine creatures flourish where plankton abound. "In the cen-

ROB CRANSTON

ter of all oceans are empty gyres—'deserts' with low chlorophyll and plankton—across which the animal migrates to get to 'hot' zones off the continents," she said. Color-coded, the hot zones were strips of reddish yellow and the desert a yawning blue. "If you're a tuna, why do you risk your life crossing the desert? You wake up in the Coral Sea, and you swim to the other side. That's a journey of 6,000 kilometers [3,720 miles]. Why? We think they somehow know the food is better that particular year in the zone of rich upwelling off Baja California, for instance." She glanced at the ocean outside her window. "We can't tell you where the most lucrative animal in the sea feeds or breeds," she said, shaking her head.

THE IDEA FOR the census of marine life originated with Jesse Ausubel, a program officer at the Alfred P. Sloan Foundation. Based in New York City, the foundation sponsors research and helps launch new scientific programs. In 1997, following a National Academy of Sciences report calling for increasing research on marine biodiversity, the foundation proposed a sweeping tally to be called the Census of the Fishes. But counting even a fraction of the fish in the sea, scientists hastened to point out in several brainstorming sessions, would be impossible. After all, scientists estimate there are 20,000 kinds of marine fish—including perhaps 5,000 yet to be discovered.

Sloan Foundation advisers, led by Frederick Grassle of Rutgers University, scaled back the plan, deciding to hunt for some new species and assess others. The project shifted focus again after biologists studying marine mammals and other non-fish creatures said they wanted in on the action too. So it was renamed the Census of Marine Life. All told, the enterprise will consist of 30 to 40 separate field studies, at $5 million to $25 million apiece, with the money coming largely from the U.S. and foreign governments.

The census's senior scientist, Ronald O'Dor, a marine biologist at Dalhousie University in Halifax, Nova Scotia, who

Bottom line: Daniel Boroquez hauled in a tagged squid—and a $50 bonus.

BOB CRANSTON

is now based at the Consortium for Oceanographic Research and Education in Washington, D.C., says the virtue of the approach is that the animals lead the way. "They cover more area than an expensive, traditional research cruise can," he says. "You let the animals choose your sites."

The study that Block and three other scientists are heading is called Tagging of Pacific Pelagics (TOPP), and the plan is to monitor a dozen animal species, including tuna, Humboldt squid, great white sharks and elephant seals. Some tagged creatures are likely to cross paths, the researchers say, possibly providing new insights into how the animals interact in the wild. One of the scientists, Daniel Costa of the University of California at Santa Cruz, mounts electronic sensors and transmitters onto elephant seals, which weigh up to 7,000 pounds, when they come ashore to breed. He says he looks forward to learning whether the seals' travels overlap with tuna migration patterns. If so, that might hint at common feeding strategies that the two species were previously not known to share.

Though the marine census project doesn't officially start until later this year, pilot studies have been under way for a couple of years. Besides Block's tuna-tagging project in Monterey, another pilot study involves tagging squid in the Sea of Cortés. William Gilly, of Stanford's Marine Station, has worked with fishermen in Mexico to see how willingly they would return a yellow plastic ring attached to squid they caught—a dry run before attaching electronic sensors to the animals. First, Gilly went out with the fishermen at night and, using handheld lines, caught

Warm-blooded animals that must swim ceaselessly or die, tuna can thrive for years at the Monterey Bay research center.

squid, some weighing 50 pounds or more. The scientists put the plastic rings on nearly 1,000 animals and released them. Signs posted near fishing docks offered a $50 reward for each tag returned. Over a three-month period, about 80 tags were recovered. That pleased the scientists, who also were glad to learn *where* the squid were caught, hinting at winter migrations of squid in the Sea of Cortés.

"The census is an example of an old-fashioned mentality in science," Gilly says, meaning it addresses a basic curiosity. "We're reopening the blinders, the way we used to look at the world, through wide exploration."

BLOCK AND OTHERS engaged in the census may shed light on the condition of some of the world's fisheries, which are under great strain. People exploit just a few hundred fish species for food, and populations of those species have fallen precipitously, some as much as 90 percent. Some environmentalists and marine experts call the situation a crisis, but even people who dispute that view do not doubt that fishermen and fishing nations are working harder than ever for smaller catches.

Whether the fishing industry will make the best use of data collected by the sea searchers is open to question. Recent studies by Block and colleagues in the Atlantic have found that far more tuna than previously believed cross the ocean. The finding overturns a basic assumption held by not only biologists but also international policymakers, who set different fishing quotas for the eastern and western Atlantic. But it now appears that alleged overfishing in the eastern Atlantic and Mediterranean has reduced catches in the western Atlantic and North America, say some researchers, who are calling for lower fishing limits in the Atlantic. Block says she hopes that fisheries managers take steps to "make the changes necessary to ensure the future of the species."

At the end of a long day for Block in Monterey, she was still wearing a wet suit. She climbed down into a tank at the tuna center with her graduate students and resumed showing them how to affix satellite sensors to a couple of the corralled fish. Even when she got out of the tank, Block continued coaching from a walkway above it. "Keep the fish under water," she called, pacing back and forth. Below her, the captured bluefin were swimming round and round, never stopping, as relentless as the researcher herself. ○

GERRY GROPP

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Hamilton Takes Command

In 1775, the 20-year-old Alexander Hamilton took up arms to fight the British. Soon the brash young soldier would display the courage and savvy that would take him to the apex of power in the new U.S. government

ILLUSTRATIONS BY STAN FELLOWS

"ALEXANDER HAMILTON is the least appreciated of the founding fathers because he never became president," says Willard Sterne Randall, a professor of humanities at Champlain College in Burlington, Vermont, and the author of Alexander Hamilton: A Life, *released this month from HarperCollins Publishers. "Washington set the mold for the presidency, but the institution wouldn't have survived without Hamilton."*

Hamilton was born January 11, 1755, on the island of Nevis in the West Indies, the illegitimate son of James Hamilton, a merchant from Scotland, and Rachel Fawcett Levine, a doctor's daughter who was divorced from a plantation owner. His unmarried parents separated when Hamilton was 9, and he went to live with his mother, who taught him French and Hebrew and how to keep the accounts in a small dry goods shop by which she supported herself and Hamilton's older brother, James. She died of yellow fever when Alexander was 13.

After her death, Hamilton worked as a clerk in the Christiansted (St. Croix) office of a New York-based import-export house. His employer was Nicholas Cruger, the 25-year-old scion of one of colonial America's leading mercantile families, whose confidence he quickly gained. And in the Rev. Hugh Knox, the minister of Christiansted's first Presbyterian church, Hamilton found another patron. Knox, along with the Cruger family, arranged a scholarship to send Hamilton to the United States for his education. At age 17, he arrived in Boston in October 1772 and was soon boarding at the Elizabethtown Academy in New Jersey, where he excelled in English composition, Greek and Latin, completing three years' study in one. Rejected by Princeton because the college refused to go along with his demand for accelerated study, Hamilton went instead in 1773 to King's College (now Columbia University), then located in Lower Manhattan. In events leading up to the excerpt that follows, Hamilton was swept up by revolutionary fervor and, at age 20, dropped out of King's College and formed his own militia unit of about 25 young men.

In June 1775, the Continental Congress in Philadelphia chose Virginia delegate Col. George Washington as commander in chief of the Continental Army then surrounding British-occupied Boston. Hurrying north, Washington spent a day in New York City, where, on Sunday, June 25, 1775, Alexander Hamilton braced at attention for Washington to inspect his militiamen at the foot of Wall Street.

Two months later, the last hundred British troops withdrew from Manhattan, going aboard the 64-gun man-of-war *Asia*. At 11 o'clock on the night of August 23, Continental Army Artillery captain John Lamb gave orders for his company, supported by Hamilton's volunteers and a light infantry unit, to seize two dozen cannons from the battery at the island's southern tip. The *Asia*'s captain, having been warned by Loyalists that the Patriots would raid the fort that night, posted a patrol barge with redcoats just offshore. Shortly after midnight, the British spotted Hamilton, his friend Hercules Mulligan, and about 100 comrades tugging on ropes they had attached to the heavy guns. The redcoats opened a brisk musket fire from the barge. Hamilton and the militiamen returned fire, killing a redcoat. At this, the *Asia* hoisted sail and began working in close to shore, firing a 32-gun broadside of solid shot. One cannonball pierced the roof of Fraunces Tavern at Broad and Pearl Streets. Many years later Mulligan would recall: "I was engaged in hauling off one of the cannons, when Mister Hamilton came up and gave me his musket to hold and he took hold of the rope. . . . Hamilton [got] away with the cannon. I left his musket in the Battery and retreated. As he was returning, I met him and he asked for his piece. I told him where I had left it and he went for it, notwithstanding the firing continued, with as much concern as if the [*Asia*] had not been there."

General Washington praised Hamilton for his "masterly manner of executing the work."

Hamilton's cool under fire inspired the men around him: they got away with 21 of the battery's 24 guns, dragged them uptown to City Hall Park and drew them up around the Liberty Pole under guard for safekeeping.

On January 6, 1776, the New York Provincial Congress ordered that an artillery company be raised to defend the colony; Hamilton, unfazed that virtually all commissions were going to native colonists of wealth and social position, leaped at the opportunity. Working behind the scenes to advance his candidacy, he won the support of Continental Congressmen John Jay and William Livingston. His mathematics teacher at King's College vouched for his mastery of the necessary trigonometry, and Capt. Stephen Bedlam, a skilled artillerist, certified that he had "examined Alexander Hamilton and judges him qualified."

While Hamilton waited to hear about his commission, Elias Boudinot, a leader of the New Jersey Provincial Congress, wrote from Elizabethtown to offer him a post as brigade major and aide-de-camp to Lord Stirling (William Alexander), commander of the newly formed New Jersey Militia. It was tempting. Hamilton had met the wealthy Scotsman as a student at Elizabethtown Academy and thought highly of him. And if he accepted, Hamilton would likely be the youngest major in the Revolutionary armies. Then Nathanael Greene, a major general in the Continental Army, invited Hamilton to become *his* aide-de-camp as well. After thinking the offers over, Hamilton declined both of them, gambling instead on commanding his own troops in combat.

Sure enough, on March 14, 1776, the New York Provincial Congress ordered Alexander Hamilton "appointed Captain of the Provincial Company of Artillery of this colony." With the last of his St. Croix scholarship money, he had his friend Mulligan, who owned a tailor shop, make him a blue coat with buff cuffs and white buckskin breeches.

He then set about recruiting the 30 men required for his company. "We engaged 25 men [the first afternoon]," Mulligan remembered, even though, as Hamilton complained in a letter to the provincial congress, he could not match the pay offered by Continental Army recruiters. On April 2, 1776, two weeks after Hamilton received his commission, the provincial congress ordered him and his fledgling company to relieve Brig. Gen. Alexander McDougall's First New York Regiment, guarding the colony's official records, which were being shipped by wagon from New York's City Hall to the abandoned Greenwich Village estate of Loyalist William Bayard.

In late May 1776, ten weeks after becoming an officer, Hamilton wrote to New York's provincial congress to contrast his own meager payroll with the pay rates spelled out by the Continental Congress: "You will discover a considerable difference," he said. "My own pay will remain the same as it is now, but I make this application on behalf of the company, as I am fully convinced such a disadvantageous distinction will have a very pernicious effect on the minds and behavior of the men. They do the same duty with the other companies and think themselves entitled to the same pay."

The day the provincial congress received Captain Hamil-

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Hamilton's soldiers roared off down Broadway to pull down and smash the only equestrian statue of King George III in America.

ton's missive, it capitulated to all his requests. Within three weeks, the young officer's company was up to 69 men, more than double the required number.

Meanwhile, in the city, two huge bivouacs crammed with tents, shacks, wagons and mounds of supplies were taking shape. At one of them, at the juncture of present-day Canal and Mulberry Streets, Hamilton and his company dug in. They had been assigned to construct a major portion of the earthworks that reached halfway across Manhattan Island. Atop Bayard's Hill, on the highest ground overlooking the city, Hamilton built a heptagonal fort, Bunker Hill. His friend Nicholas Fish described it as "a fortification superior in strength to any my imagination could ever have conceived." When Washington inspected the works, with its eight 9-pounders, four 3-pounders and six cohorn mortars, in mid-April, he commended Hamilton and his troops "for their masterly manner of executing the work."

Hamilton also ordered his men to rip apart fences and cut down some of the city's famous stately elm trees to build barricades and provide firewood for cooking. In houses abandoned by Loyalists, his soldiers propped muddy boots on damask furniture, ripped up parquet floors to fuel fireplaces, tossed garbage out windows and grazed their horses in gardens and orchards. One Loyalist watched in horror as army woodcutters, ignoring his protests, chopped down his peach and apple orchards on 23rd Street. Despite a curfew, drunken soldiers caroused with prostitutes in the streets around Trinity Church. By midsummer, 10,000 American troops had transformed New York City into an armed camp.

THE VERY DAY—July 4, 1776—that the founding fathers of the young nation-to-be were signing the Declaration of Independence in Philadelphia, Captain Hamilton watched through his telescope atop Bayard's Hill as a forest of ship masts grew ominously to the east; in all, some 480 British warships would sail into New York Harbor. One of Washington's soldiers wrote in his diary that it seemed "all London was afloat." Soon they had begun to disgorge the first of what would swell to 39,000 troops—the largest expeditionary force in English history—onto Staten Island. On July 9, at 6 o'clock in the evening, Hamilton and his men stood to attention on the commons to hear the declaration read aloud from the balcony of City Hall. Then the soldiers roared down Broadway to pull down and smash the only equestrian statue of King George III in America.

Three days later, British Vice Admiral Lord Richard Howe detached two vessels from his flotilla, the 44-gun *Phoenix* and the 28-gun *Rose*, to sail up the Hudson and probe

shore defenses. The captain of the *Rose* coolly sipped claret on his quarterdeck as his vessel glided past the battery on Lower Manhattan—where an ill-trained American gun crew immediately blew itself up. The ships sailed unmolested up the river to Tarrytown as colonial troops abandoned their posts to watch. An appalled Washington fumed: "Such unsoldierly conduct gives the enemy a mean opinion of the army." On their return, the two British ships passed within cannon range of Hamilton's company at Fort Bunker Hill. He ordered his 9-pounders to fire, which the British warships returned. In the brief skirmish, one of Hamilton's cannons burst, killing one man and severely wounding another.

On August 8, Hamilton tore open orders from Washington: his company was to be on round-the-clock alert against an imminent invasion of Manhattan. "The movements of the enemy and intelligence by deserters give the utmost reason to believe that the great struggle in which we are contending for everything dear to us and our posterity, is near at hand," Washington wrote.

But early on the morning of August 27, 1776, Hamilton watched, helpless, as the British ferried 22,000 troops from Staten Island, not to Manhattan at all, but to the village of Brooklyn, on Long Island. Marching quickly inland from a British beachhead that stretched from Flatbush to Gravesend, they met little resistance. Of the 10,000 American troops on Long Island, only 2,750 were in Brooklyn, in four makeshift forts spread over four miles. At Flatbush, on the American east flank, Lord Charles Cornwallis quickly captured a mounted patrol of five young militia officers, including Hamilton's college roommate, Robert Troup, enabling 10,000 redcoats to march stealthily behind the Americans. Cut off by an 80-yard-wide swamp, 312 Americans died in the ensuing rout; another 1,100 were wounded or captured. By rowboat, barge, sloop, skiff and canoe in a howling northeaster, a regiment of New England fishermen transported the survivors across the East River to Manhattan.

At a September 12, 1776, council of war, a grim-faced Washington asked his generals if he should abandon New York City to the enemy. Rhode Islander Nathanael Greene, Washington's second-in-command, argued that "a general and speedy retreat is absolutely necessary" and insisted, as well, that "I would burn the city and suburbs," which, he maintained, belonged largely to Loyalists.

But Washington decided to leave the city unharmed when he decamped. Before he could do so, however, the British attacked again, at Kip's Bay on the East River between present-day 30th and 34th Streets, two miles north of Hamilton's hill fort, leaving his company cut off and in danger of capture. Washington sent Gen. Israel Putnam and his aide-de-camp, Maj. Aaron Burr, to evacuate them. The pair reached Fort Bunker Hill just as American militia from Lower Manhattan began to stream past Hamilton heading north on the Post Road (now Lexington Avenue). Although Hamilton had orders from Gen. Henry Knox to rally his men for a stand, Burr, in the name of Washington, countermanded Knox and led Hamilton, with little but the clothes on his back, two cannons and his men, by a concealed path up the west side of the island to freshly dug entrenchments at Harlem Heights. Burr most likely saved Hamilton's life.

THE BRITISH BUILT defenses across northern Manhattan, which they now occupied. On September 20, fanned by high winds, a fire broke out at midnight in a frame house along the waterfront near Whitehall Slip. Four hundred and ninety-three houses—one-fourth of the city's buildings—were destroyed before British soldiers and sailors and townspeople put out the flames. Though the British accused Washington of setting the fire, no evidence has ever been found to link him to it. In a letter to his cousin Lund at Mount Vernon, Washington wrote: "Providence, or some good honest fellow, has done more for us than we were disposed to do for ourselves."

By mid-October, the American army had withdrawn across the Harlem River north to White Plains in Westchester County. There, on October 28, the British caught up with them. Behind hastily built earthworks, Hamilton's artillerymen crouched tensely as Hessians unleashed a bayonet charge up a wooded slope. Hamilton's gunners, flanked by Maryland and New York troops, repulsed the assault, causing heavy casualties, before being driven farther north.

Cold weather pinched the toes and numbed the fingers of Hamilton's soldiers as they dug embankments. His pay book indicates he was desperately trying to round up enough shoes for his barefoot, frostbitten men. Meanwhile, an expected British attack did not materialize. Instead, the redcoats and Hessians stormed the last American stronghold on Manhattan Island, Fort Washington, at present-day 181st Street, where 2,818 besieged Americans surrendered on November 16. Three days later, the British force crossed the Hudson and attacked Fort Lee on the New Jersey shore near the present-day George Washington Bridge. The Americans escaped, evacuating the fort so quickly they left behind 146 precious cannons, 2,800 muskets and 400,000 cartridges.

In early November, Captain Hamilton and his men had been ordered up the Hudson River to Peekskill to join a column led by Lord Stirling. The combined forces crossed the Hudson to meet Washington and, as the commander in chief observed, his 3,400 "much broken and dispirited" men, in Hackensack, New Jersey.

Hamilton hitched horses to his two remaining 6-pound guns and marched his gun crews 20 miles in one day to the Raritan River. Rattling through Elizabethtown, he passed the Elizabethtown Academy where, only three years earlier, his greatest concern had been Latin and Greek declensions.

Dug in near Washington's Hackensack headquarters on November 20, Hamilton was startled by the sudden appearance of his friend Hercules Mulligan, who, to Hamilton's great dismay, had been captured some three months earlier at the Battle of Long Island. Mulligan had been determined a "gentleman" after his arrest and released on his honor not to

Every now and then Hamilton, apparently lost in thought, patted the cannon as if it were a favorite horse or a pet plaything.

leave New York City. After a joyous reunion, Hamilton evidently persuaded Mulligan to return to New York City and to act, as Mulligan later put it, as a "confidential correspondent of the commander-in-chief"—a spy.

After pausing to await Gen. Sir William Howe, the British resumed their onslaught. On November 29, a force of about 4,000, double that of the Americans, arrived at a spot across the Raritan River from Washington's encampment. While American troops tore up the planks of the New Bridge, Hamilton and his guns kept up a hail of grapeshot.

For several hours, the slight, boyish-looking captain could be seen yelling, "Fire! Fire!" to his gun crews, racing home bags of grapeshot, then quickly repositioning the recoiling guns. Hamilton kept at it until Washington and his men were safely away toward Princeton. Halfway there, the general dispatched a brief message by express rider to Congress in Philadelphia: "The enemy appeared in several parties on the heights opposite Brunswick and were advancing in a large body toward the [Raritan] crossing place. We had a smart cannonade whilst we were parading our men."

Washington asked one of his aides to tell him which commander had halted his pursuers. The man replied that he had "noticed a youth, a mere stripling, small, slender, almost delicate in frame, marching, with a cocked hat pulled down over his eyes, apparently lost in thought, with his hand resting on a cannon, and every now and then patting it, as if it were a favorite horse or a pet plaything." Washington's stepgrandson Daniel Parke Custis later wrote that Washington was

"charmed by the brilliant courage and admirable skill" of the then 21-year-old Hamilton, who led his company into Princeton the morning of December 2. Another of Washington's officers noted that "it was a model of discipline; at their head was a boy, and I wondered at his youth, but what was my surprise when he was pointed out to me as that Hamilton of whom we had already heard so much."

AFTER LOSING New Jersey to the British, Washington ordered his army into every boat and barge for 60 miles to cross the Delaware River into Pennsylvania's Bucks County. A shivering Hamilton and his gunners made passage in a Durham ore boat, joining artillery already ranged along the western bank. Whenever British patrols ventured too near the water, Hamilton's and the other artillerymen repulsed them with brisk fire. The weather grew steadily colder. General Howe said he found it "too severe to keep the field." Returning to New York City with his redcoats, he left a brigade of Hessians to winter at Trenton.

In command of the brigade, Howe placed Col. Johann Gottlieb Rall, whose troops had slaughtered retreating Americans on Long Island and at Fort Washington on Manhattan. His regiments had a reputation for plunder and worse. Reports that the Hessians had raped several women, including a 15-year-old girl, galvanized New Jersey farmers, who had been reluctant to help the American army. Now they formed militia bands to ambush Hessian patrols and British scouting parties around Trenton. "We have not slept one night in peace since we came to this place," one Hessian officer moaned.

Washington now faced a vexing problem: the enlistments of his 3,400 Continental troops expired at midnight New Year's Eve; he decided to attack the Trenton Hessians while they slept off the effects of their Christmas celebration. After so many setbacks, it was a risky gambit; defeat could mean the end of the American cause. But a victory, even over a small outpost, might inspire lagging Patriots, cow Loyalists, encourage reenlistments and drive back the British—in short, keep the Revolution alive. The main assault force was made up of tested veterans. Henry Knox, Nathanael Greene, James Monroe, John Sullivan and Alexander Hamilton, future leaders of America's republic, huddled around a campfire at McKonkey's Ferry the frigid afternoon of December 25, 1776, to get their orders. Hamilton and his men had blankets wrapped around them as they hefted two 6-pounders and their cases of shot and shells onto the 9-foot-wide, 60-foot-long Durham iron-ore barges they had commandeered, then pushed and pulled their horses aboard. Nineteen-year-old James Wilkinson noted in his journal that footprints down to the river were "tinged here and there with blood from the feet of the men who wore broken shoes." Ship captain John Glover ordered the first boatloads to push off at 2 a.m. Snow and sleet stung Hamilton's eyes.

Tramping past darkened farmhouses for 12 miles, Hamilton's company led Nathanael Greene's division as it swung off to the east to skirt the town. One mile north of Trenton, Greene halted the column. At precisely 8 in the morning, Hamilton unleashed his artillery on the Hessian outpost. Three minutes later, American infantry poured into town. Driving back Hessian pickets with their bayonets, they charged into the old British barracks to confront groggy Hessians at gunpoint. Some attempted to regroup and counterattack, but Hamilton and his guns were waiting for them. Firing in tandem, Hamilton's cannons cut down the Hessians with murderous sheets of grapeshot. The mercenaries sought cover behind houses but were driven back by Virginia riflemen, who stormed into the houses and fired down from upstairs windows. Hessian artillerymen managed to get off only 13 rounds from two brass fieldpieces before Hamilton's gunners cut them in two. Riding back and forth behind the guns, Washington saw for himself the brutal courage and skillful discipline of this youthful artillery captain.

The Hessians' two best regiments surrendered, but a third escaped. As the Americans recrossed the Delaware, both they and their prisoners, nearly 1,000 in all, had to stomp their feet to break up the ice that was forming on the river. Five men froze to death.

Stung by the defeat, British field commander Lord Cornwallis raced across New Jersey with battle-seasoned grenadiers to retaliate. Americans with $10 gold reenlistment bonuses in their pockets recrossed the river to intercept them. When the British halted along a three-mile stretch of Assunpink Creek outside Trenton and across from the Americans, Washington duped British pickets by ordering a rear guard to tend roaring campfires and to dig noisily through the night while his main force slipped away.

At 1 a.m., January 2, 1777, their numbers reduced from 69 to 25 by death, desertion and expired enlistments, Hamilton and his men wrapped rags around the wheels of their cannons to muffle noise, and headed north. They reached the south end of Princeton at sunrise, to face a brigade—some 700 men—of British light infantry. As the two forces raced for high ground, American general Hugh Mercer fell with seven bayonet wounds. The Americans retreated from a British bayonet charge. Then Washington himself galloped onto the battlefield with a division of Pennsylvania militia, surrounding the now outnumbered British. Some 200 redcoats ran to Nassau Hall, the main building at Princeton College. By the time Hamilton set up his two cannons, the British had begun firing from the windows of the red sandstone edifice. College tradition holds that one of Hamilton's 6-pound balls shattered a window, flew through the chapel and beheaded a portrait of King George II. Under Hamilton's fierce cannonade, the British soon surrendered.

IN THE WAKE of twin victories within ten days, at Trenton and Princeton, militia volunteers swarmed to the American standard, far more than could be fed, clothed or armed. Washington's shorthanded staff was ill-equipped to coordinate logistics. In the four months

On the morning of July 11, 1804, a shot rang out. Aaron Burr's bullet struck Hamilton in the right side, tearing through his liver.

since the British onslaught had begun, 300 American officers had been killed or captured. "At present," Washington complained, "my time is so taken up at my desk that I am obliged to neglect many other essential parts of my duty. It is absolutely necessary for me to have persons [who] can think for me as well as execute orders. . . . As to military knowledge, I do not expect to find gentlemen much skilled in it. If they can write a good letter, write quick, are methodical and diligent, it is all I expect to find in my aides."

He would get all that and more. In January, shortly after the army was led into winter quarters at Morristown, New Jersey, Nathanael Greene invited Hamilton, who had just turned 22, to dinner at Washington's headquarters. There, Washington invited the young artillery officer to join his staff. The appointment carried a promotion from captain to lieutenant colonel, and this time Hamilton did not hesitate. On March 1, 1777, he turned over the command of his artillery company to Lt. Thomas Thompson—a sergeant whom, against all precedent, he had promoted to officer rank—and joined Washington's headquarters staff.

It would prove a profound relationship.

"During a long series of years, in war and in peace, Washington enjoyed the advantages of Hamilton's eminent talents, integrity and felicity, and these qualities fixed [Hamilton] in [Washington's] confidence to the last hour of his life," wrote Massachusetts Senator Timothy Pickering in 1804. Hamilton, the impecunious abandoned son, and Washington, the patriarch without a son, had begun a mutually dependent relationship that would endure for nearly 25 years—years corresponding to the birth, adolescence and coming to maturity of the United States of America.

HAMILTON WOULD BECOME inspector general of the U.S. Army and in that capacity founded the U.S. Navy. Along with James Madison and John Jay, he wrote the Federalist Papers, *essays that helped gain popular support for the then-proposed Constitution. In 1789, he became the first Secretary of the Treasury, under President Washington and almost single-handedly created the U.S. Mint, the stock and bond markets and the concept of the modern corporation.*

After the death of Washington on December 14, 1799, Hamilton worked secretly, though assiduously, to prevent the reelection of John Adams as well as the election of Thomas Jefferson and Aaron Burr. Burr obtained a copy of a Hamilton letter that branded Adams an "eccentric" lacking in "sound judgment" and got it published in newspapers all over America. In the 1801 election, Jefferson and Burr tied in the Electoral College, and Congress made Jefferson president, with Burr his vice president. Hamilton, his political career in tatters, founded the New York Evening Post *newspaper, which he used to attack the new administration. In the 1804 New York gubernatorial election, Hamilton opposed Aaron Burr's bid to replace Governor George Clinton. With Hamilton's help, Clinton won.*

When he heard that Hamilton had called him "a dangerous man, and one who ought not to be trusted with the reins of government," Burr demanded a written apology or satisfaction in a duel. On the morning of Thursday, July 11, 1804, on a cliff in Weehawken, New Jersey, Hamilton faced the man who had rescued him 28 years earlier in Manhattan. Hamilton told his second, Nathaniel Pendleton, that he intended to fire into the air so as to end the affair with honor but without bloodshed. Burr made no such promise. A shot rang out. Burr's bullet struck Hamilton in the right side, tearing through his liver. Hamilton's pistol went off a split second later, snapping a twig overhead. Thirty-six hours later, Alexander Hamilton was dead. He was 49 years old. ○

The extraordinary number of Nova Scotia centenarians (Betty Cooper, 101, above) has led researchers to wonder if the trend is tied more to genetics or to traditional lifestyles in towns like Peggy's Cove (right).

PUZZLE OF THE CENTURY

Is it the fresh air, the seafood, or genes?
Why do so many hardy 100-year-olds live in, yes, Nova Scotia?

MAYBE IT'S THAT HER FACE is so smooth and pink or the way she aims her green eyes right into yours, talking fast and crisply articulating each word. Her gestures are as nimble as a hatmaker's. You would be tempted to say Betty Cooper isn't a day over 70. She's 101. "If I couldn't read, I'd go crazy," she says, lifting the magazine on her lap. "I like historical novels—you know, Henry VIII and Anne Boleyn and all that kind of stuff. I get a big batch from the Books for Shut-ins every three weeks, and I read them all."

Betty wears bifocals, and it's no small thing to see as clearly as she does after watching a century go by. Though her hearing is not what it used to be, a hearing aid makes up for that. Complications from a knee operation more than 30 years ago keep her from walking easily. But she continues to live in her own apartment, in Halifax, Nova Scotia, with assistance from women who drop by to cook meals, run errands and help her get around.

Cooper's health and independence confound the notion that living a very long life entails more pain and suffering than it's worth. "I do have a problem remembering," she allows. "I go to say someone's name and it escapes me. Then five minutes later, I remember it." Of course, lots of people half her age have that complaint.

BY MARY DUENWALD · PHOTOGRAPHS BY MICHEAL McLAUGHLIN

"New Scotland," settled by the British and French in the 1600s, would retain old-world traditions.

Betty Cooper is a diamond-quality centenarian, whose body and brain appear to be made of a special material that has scarcely worn down. But just being a Nova Scotian may have something to do with it. At least that's the suspicion of medical researchers who plan to study Cooper and others in Nova Scotia to learn more about the reasons for their very long—and hardy—lives. In parts of Nova Scotia, centenarians are up to 3 times more common than they are in the United States as a whole, and up to 16 times more common than they are in the world population.

Why? Nova Scotians have their own theories. "We're by the sea, and we get a lot of fresh air," says Grace Mead, 98, of Halifax. "I've always been one for fresh air."

"I was a very careful young girl," says Hildred Shupe, 102, of Lunenburg. "I never went around with men."

"I mind my own business," says Cora Romans, 100, of Halifax.

"The Lord just expanded my life, I guess," says Elizabeth Slauenwhite, 99, of Lunenburg. "I'm in His hands, and He looked after me."

Delima Rose d'Entremont, a tiny, brown-eyed woman of 103, of Yarmouth, says the piano helped keep her going. "I won two medals in music when I was younger, and I taught piano all my life," she says, sitting straight in her wheelchair and mimicking herself at the keys. She occasionally performs for friends at her nursing home, Villa St. Joseph-du-Lac.

"I'm amazed I'm living this long," says Hildred Shupe, 102, of Lunenburg, a historic town that intrigues medical researchers.

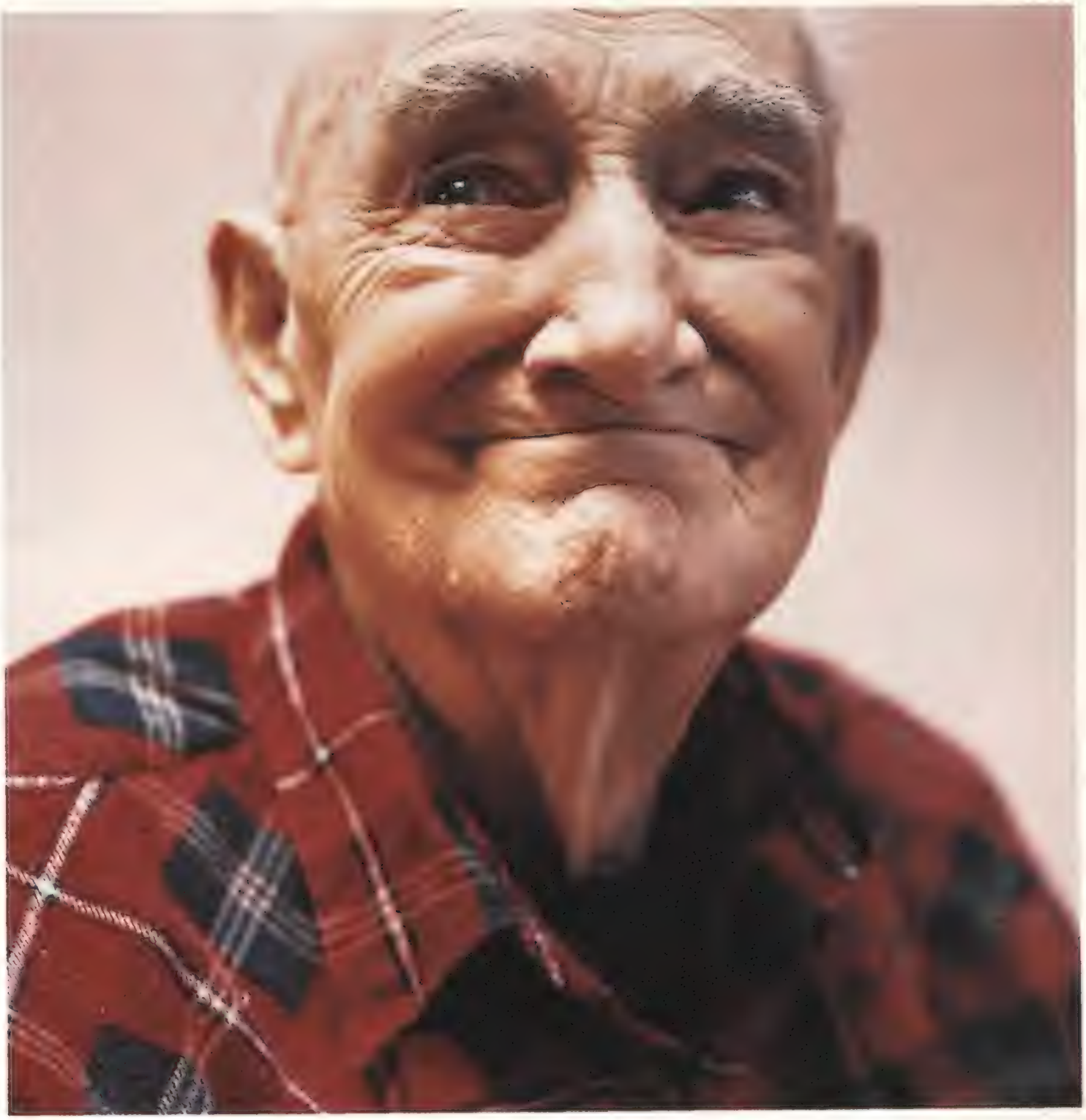
Cooper grew up on a farm in Indian Harbor Lake, on the province's eastern shore, and remembers meals that few followers of today's nonfat regimens would dare contemplate. "I ate the right stuff when I was growing up," she explains. "Lots of buttermilk and curds. And cream—in moderation. And when I think of the homemade bread and butter, and the toast with cups of cocoa," she says, trailing off in a high-calorie rhapsody. Then she adds: "I never smoked. And I never drank to excess. But I don't know if that made the difference."

In some ways, Nova Scotia is an unlikely longevity hot spot; a healthful lifestyle is hardly the provincial norm. Physicians say that despite abundances of brisk sea air, fresh fish and lobster and locally grown vegetables and fruits, Nova Scotians as a group do not take exceptionally good care of themselves. "The traditional diet is not that nutritious," says Dr. Chris MacKnight, a geriatrician at Dalhousie University in Halifax who is studying the centenarians. "It's a lot of fried food." Studies show that obesity and smoking levels are high and exercise levels low. Also, the two historically most important industries—fishing and logging—are dangerous, and extract a toll. "In fact," MacKnight says, "we have one of the lowest *average* life expectancies in all of Canada."

Yet the province's cluster of centenarians has begged for a scientific explanation ever since it came to light several years ago. Dr. Thomas Perls, who conducts research on centenarians at the Boston Medical Center, noticed that people in his study often spoke of very old relatives in Nova Scotia. (To be sure, the two regions have historically close ties; a century ago, young Nova Scotians sought their fortunes in what they called "the Boston States.") At a gerontology meeting, Perls talked to one of MacKnight's Dalhousie colleagues, who reported seeing a centenarian's obituary in a Halifax newspaper nearly every week. "That was amazing," Perls recalls. "Down here, I see obituaries for centenarians maybe once every five or six weeks." Perls says he became convinced that "Nova Scotians had something up their

"Nova Scotians had something up their sleeve" that enabled so many of them to reach such an advanced age, says a U.S.-based longevity expert. "Someone had to look into it."

MARY DUENWALD, former executive editor of Harper's Bazaar, *writes about health. New York-based photographer MICHEAL MCLAUGHLIN attended the Nova Scotia College of Art and Design.*



"I worked on farms, in the woods, on the rails," says aspiring centenarian Arthur Hebb, 90.

sleeve" that enabled them to reach such advanced ages. "Someone had to look into it."

MacKnight and researcher Margaret Miedzyblocki began by analyzing Canadian census data. They found that the province has about 21 centenarians per 100,000 people (the United States has about 18; the world, 3). More important, MacKnight and Miedzyblocki narrowed the quest to two areas along the southwestern coast where 100-year-olds were extraordinarily common, with up to 50 centenarians per 100,000 people. One concentration is in Yarmouth, a town of 8,000, and the other is in Lunenburg, a town of 2,600.

To the researchers, the notable feature was not that Yarmouth and Lunenburg were started by people from different countries. Rather, the key was what the two towns have in common: each is a world of its own, populated to a significant degree by descendants of original settlers. And as the researchers learned, longevity tends to run in families. Elroy Shand, a 96-year-old in Yarmouth, says he has a 94-year-old aunt and had two uncles who lived into their 90s. Delima Rose d'Entremont's mother died at 95. Betty Cooper's father died at 98. Says MacKnight: "It's very possible that the 100-year-olds in Nova Scotia have some genetic factor that has protected them—even from all the bad effects of the local environment."

ONLY A THREE-HOUR FERRY RIDE from Bar Harbor, Maine, Nova Scotia extends like a long foot into the Atlantic, connected to New Brunswick by a thin ankle. Almost all the stormy weather that roars up the Eastern Seaboard crashes into Nova Scotia. In winter, powerful northeasters batter the province with snow and freezing rain. The windswept shoreline, the vast expanse of ocean beyond, and frequent low hovering clouds make the place *feel* remote.

Unlike most Nova Scotians, whose ancestors were English, Irish and Scottish, Lunenburg residents largely trace their heritage to Germany. In the mid-1700s, the province's British government moved to counteract the threat posed by French settlers, the Acadians, who practiced Catholicism

Grace Levy, 95, of Lunenburg, quit school at 13 to clean houses: "My Dad said you've gotta work."

and resisted British rule. The provincial government enticed Protestants in southwestern Germany to immigrate to Nova Scotia by offering them tax-free land grants, surmising they would not sympathize with either the unruly Acadians or the American revolutionaries in the colonies to the south.

Settling predominantly along the south shore of Nova Scotia, the Germans eventually gave up on farming because the soil is so rocky. They turned to fishing and shipbuilding. For generations, they kept mostly to themselves, marrying within the community and hewing to tradition. Lunenburg has so retained its original shipbuilding, seafaring character that the United Nations has named it a World Heritage Site.

Grace Levy, of Lunenburg, is a petite 95-year-old woman with blue eyes, shining white hair and impossibly smooth skin. She has two sisters, both of whom are still living at ages 82 and 89, and five brothers, four of whom drowned in separate fishing accidents. She left school at age 13 to do housework for other families in Lunenburg. The hardships seem not to have dampened her spirit—or health. "My Dad said you've gotta work," she recalls. "He was a kind of a hard taskmaster. He didn't mind using a piece of rope on our back if we did the least little thing. But Mom was so good and kind."

Grace married a man from nearby Tancook. Although the two were not blood relatives, their ancestries so overlapped they had the same last name. "My name has always been Levy," she says with a smile that flashes white teeth. "I had a brother named Harvey Levy and I married a Harvey Levy."

The town of Yarmouth was settled by New Englanders, but areas just to the south and north were settled by the French, whose plight is dramatized in Henry Wadsworth Longfellow's epic poem *Evangeline*. It tells the story of lovers from Nova Scotia's northern "forest primeval" who were separated during the brutal Acadian expulsion of 1755, when the English governor, fed up with the French peasants' refusal to swear allegiance to Britain, banished them to the American colonies and Louisiana. Later, large numbers of Acadians returned to Nova Scotia and settled the coastline from Yarmouth north to Digby.

Scientists suspect there may be a few age-defying genes and hope to develop drugs that mimic their action. To skeptics, that sounds like a futile quest for the fountain of youth.

Dr. Chris MacKnight seeks answers to why some of the very old are spry, others frail.

After their rough treatment by the English, the Acadians were not inclined to mix with the rest of the province. Today, many people in the Yarmouth area still speak French and display the blue, white and red Acadian flag. Local radio stations play Acadian dance music, a country-French sound not unlike Louisiana zydeco.

"The Yarmouth area would have been settled by only 20 or 30 families," MacKnight says. "Many of the people who live there now are their descendants." The question is, he says, did one of the original ancestors bring a gene or genes that predisposed them to extreme longevity, which have been passed down through the generations?

In Boston, Perls and his colleagues, who have been studying centenarianism for almost a decade, gathered promising evidence to support the notion of a genetic basis for extreme longevity: a woman with a centenarian sibling is at least eight times more likely to live 100 years than a woman without such a sibling; likewise, a man with a centenarian sibling is 17 times more likely to reach 100 than a man without one. "Without the appropriate genetic variations, I think it's extremely difficult to get to 100," Perls says. "Taking better care of yourself might add a decade, but what matters is what you're packin' in your chassis."

Additional evidence comes from recent studies on DNA. Drs. Louis M. Kunkel and Annibale A. Puca of Children's Hospital in Boston—molecular geneticists working with Perls—examined DNA from 137 sets of centenarian siblings. Human beings have 23 pairs of chromosomes (the spindly structures holding DNA strands), and the researchers discovered that many of the centenarians had similarities in their DNA along the same stretch of chromosome No. 4. To Perls and colleagues, that suggested that a gene or group of genes located there contributed to the centenarians' longevity. The researchers are so determined to find one or more such genes that they formed a biotechnology company in 2001 to track them down: Centagenetix, in Cambridge, Massachusetts.

Scientists suspect there may be a handful of age-defying genes, and the competition to pinpoint and understand them is heated. Medical researchers and drug company scientists reason that if they can figure out exactly what those genes do, they may be able to develop drugs or other treatments to enhance or mimic their action. To skeptics, that might sound like the same old futile quest for a fountain of youth. But proponents of the research are buoyed by a little-appreciated fact of life for many of the super old: they're healthier than you might think.

That, too, has been borne out in Nova Scotia. "I'm forgetful, I can't help it," says 96-year-old Doris Smith of Lunenburg. "But I've never had an ache nor a pain."

"I can't remember being sick, not a real sickness," Hildred Shupe says. "But my legs are beginning to get kind of wobbly now. I don't expect to live to be 200."

Alice Strike, who served in the Royal Air Corps in World War I and lives in a veteran's healthcare facility in Halifax, doesn't recall ever being in a hospital before. She is 106.

CENTENARIANS OFTEN ARE HEALTHIER and livelier than many people in their 70s or 80s, according to research by Perls. He says that 40 percent of centenarians avoid chronic illnesses until they're 85 or older, and another 20 percent until they're over 100. "We used to think that the older you were the sicker you were," Perls says. "The fact is, the older you are, the healthier you've *been*."

He speculates that longevity-enabling genes may work via several possible mechanisms, such as protecting against chronic diseases and slowing down the aging process. Then again, those processes may amount to much the same thing. "If you slow down the rate of aging, you naturally decrease

Ninety-six-year-old Doris Smith of Lunenburg, an avid reader, was married twice—the second time "for traveling," she says.

Centenarians tend to be healthier than you might think: 40 percent avoid chronic illnesses until they're 85 or older; 20 percent postpone age-related debilities until they're 100.

We're not seeking a "fountain of youth," says Dr. Thomas Perls, but a "fountain of aging well."

susceptibility to illnesses like Alzheimer's, stroke, heart disease and various cancers," he says.

Clues to how such genes might operate come from a centenarian study being conducted by Dr. Nir Barzilai, a gerontologist and endocrinologist at Albert Einstein College of Medicine in the Bronx. Barzilai has found that his research subjects—more than 200 Ashkenazi Jewish centenarians and their children—have abnormally high blood levels of high-density lipoprotein, or HDL, a.k.a. the "good" cholesterol. The average woman has an HDL level of 55, he says, whereas the grown children of his centenarians have levels up to 140.

He believes that a gene or genes are responsible for the extremely high HDL levels, which may have helped the very old people in his studies maintain their sharp minds and clear memories. He says their high HDL levels, which are presumably controlled by genes, might protect them from heart disease; HDL clears fat from coronary arteries, among other things.

Other researchers say that longevity-enabling genes might protect people in much the same manner as caloric restriction, the only treatment or dietary strategy shown experimentally to extend life. Studies with laboratory rats have found that those fed an extremely low-calorie diet live at least 33 percent longer than rats that eat their fill. The restricted animals also seem to avoid ailments connected with aging, such as diabetes, hypertension, cataracts and cancer. Another possibility is that longevity-enabling genes limit the activities of free radicals—unpaired electrons known to corrode human tissue. Medical researchers have suggested that free radicals spur atherosclerosis and Alzheimer's disease, for instance. "Free radicals are a key mechanism in aging," Perls says. "I wouldn't be surprised if something to do with free-radical damage pops up in our genetic studies."

Among centenarians, men are rarer but rather healthier than women. Yarmouth's Elroy Shand, 96, plays computer games.

IF MACKNIGHT RECEIVES funding to pursue the research, he and his associates plan to interview Nova Scotian centenarians about their histories as well as examine them and draw blood samples for genetic analysis. He hopes to work with Perls to compare the Nova Scotians' genetic material to that from Perls' New England subjects, with an eye for similarities or differences that might betray the presence of longevity-enabling genes.

Like all students of the extremely old, MacKnight is interested in their habits and practices. "We're trying to look at frailty," MacKnight says, "or, what makes some 100-year-old people seem like they're 60 and some seem like they're 150. What are the differences between those who live in their own homes and cook their own breakfast and those who are blind and deaf and mostly demented and bed-bound? And can we develop some kind of intervention for people in their 50s and 60s to keep them from becoming frail?"

Not all centenarians—not even all of those in Nova Scotia—seem as young as Betty Cooper. And though it could be that the difference between the frail and the strong is determined largely by genes, researchers say it is also true that some people who reach 100 in fine shape have been especially prudent. Among centenarians, smoking and obesity are rare. Other qualities that are common to many centenarians include staying mentally engaged, having a measure of financial security (though not necessarily wealth) and remaining involved with loved ones. And though healthy nonagenarians and centenarians often say they've led physically active lives—"I did a lot of hard labor," says 90-year-old Arthur Hebb, of Lunenburg County, who eagerly reads the newspaper every day—Perls and other researchers haven't definitively answered that question.

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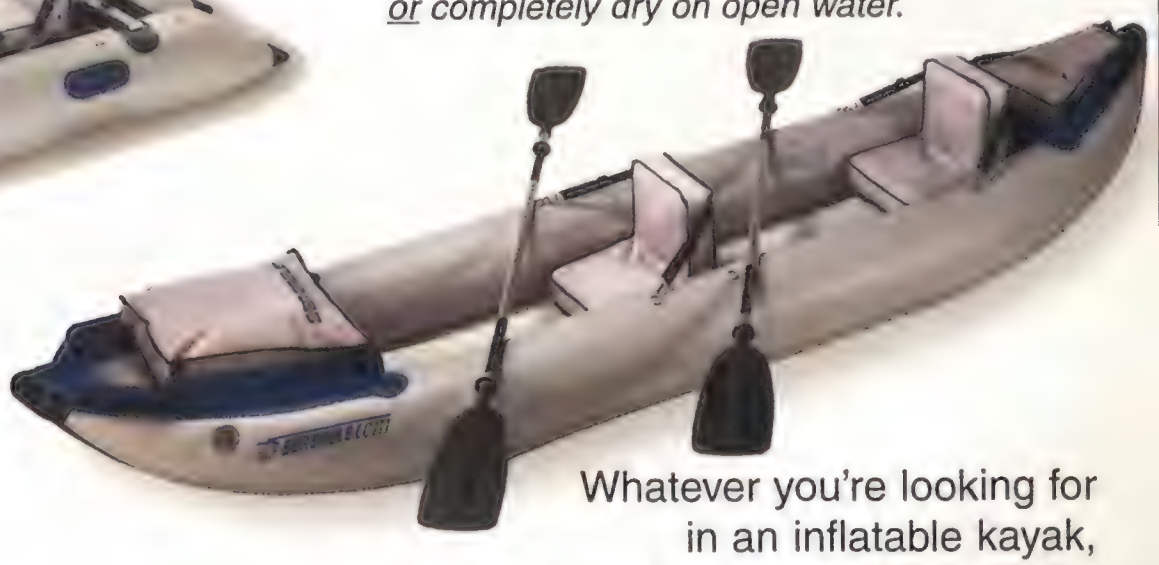

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Cora Romans, a 100-year-old former seamstress who never married, had a twin sister who reached 98.

Nor do researchers fully understand all the centenarian data, such as why the great majority are women. In the United States, women older than 100 outnumber men by more than four to one. But men at 100 are more likely than women the same age to be in good health and clearheaded. Perls and his colleague Margery Hutter Silver, a neuropsychologist, have found that about 70 percent of centenarian women show signs of dementia, compared with only 30 percent of the men. A surprisingly high proportion of the women—14 percent—have never married. In contrast, almost all centenarian men are, or have been, married.

Whether they've survived so long because they're resilient, or they're resilient because they've survived so long, centenarians are often possessed of exceptional psychological strength. "They're gregarious and full of good humor," Perls says. "Their families and friends genuinely like to be with them, because they're basically very happy, optimistic people." A genial attitude makes it easier for people to handle stress, he adds: "It isn't that centenarians have never suffered any traumatic experiences. They've been through wars, they've seen most of their friends die, even some of their own children. But they get through."

Paradoxically, that centenarians have lived such long and eventful lives makes it all the more difficult to pinpoint any one advantage they may have shared. No matter how much researchers learn about longevity-enabling genes, no matter how well they discern the biological protections that centenarians have in common, the very old will always be an exceptionally diverse group. Each one will have a story to tell—as unique as it is long.

"I started fishing when I was 14," says Shand, of Yarmouth. "Then I built fishing boats for 35 years." He uses a wheelchair because a stroke 18 years ago left him with some disability in his right leg. He is broad-chested, robust—and sharp. "I don't think hard work ever hurt anybody."

"We had a lot of meat and a lot of fish and fowl," says Elizabeth Slauenwhite, 99, of Lunenburg. There were also "vegetables and fruit," she adds. "And sweets galore." ○

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Magic Kingdom

Within the Adriatic fortress of Dubrovnik, cafés, churches and palaces reflect 1,000 years of turbulent history

BY DAVID DEVOSS

PHOTOGRAPHS BY ENRICO FERORELLI

"This was the gateway to the East," wrote novelist Rebecca West, who surveyed the city's rich history when she traveled there in 1937. "It exploited its position with such financial and naval genius that its ships were familiar all over the known world."

THE FISHERMEN had set the nets the night before and now, as the cathedral bells began to chime the start of a new day, they steered the small dory through Dubrovnik's harbor gate and into the Adriatic. The boat turned into the wind and churned along the massive city wall that 12 centuries before withstood a 15-month siege by marauding Saracens. Off to port loomed the pine-forested island of Lokrum, where King Richard I of England, the Lion Heart, was rescued from a shipwreck, it is said, while returning from the Third Crusade in 1192.

"Sometimes out here I feel as if I'm living five centuries ago," said Nino Surjan, 60, as he slowly began hauling in nets studded with small tuna. "Kids today learn about Croatia, but when I was growing up we studied the Republic of Dubrovnik—a magical place that survived more than a thousand years without an army or a king."

When the foredeck was littered with fish, Surjan produced a bottle of *rakija* (a plum brandy), took a generous gulp and handed the flask to Miho Hajtilovic, who leaned on the tiller and turned the vessel toward home. Time seemed to flow backward as the dory puttered past Renaissance palaces, the domes of Gothic churches and the medieval redoubt of Lovrijenac, outside the city walls, guarding the seaward approach to the city.

History resides everywhere here. "I was a child during the Italian occupation of parts of Croatia in World War II, and I still remember when the Partisans won that war," the 71-year-old helmsman said. "Today, Tito's communism seems to have vanished in the wind. I think it's easier for people who have a past to put their lives in perspective."

While Surjan coiled the nets, Hajtilovic loaded the fish onto a small dolly and manuevered it through the narrow harbor gate to the morning market in Gundulic Square. Already, sidewalk cafés along Stradun, the main pedestrian way, were filling with people absently watching clerics, tradesmen and professionals scurry to work. Up a narrow lane, a group of children straggled past a 16th-century church.

"In many respects, the 4,000 people living within Dubrovnik's old city walls function as they did hundreds of years ago," said Nikola Obuljen, 64, president of Dubrovnik's city council, as he ambled across a limestone thoroughfare polished by centuries of foot traffic. "Venice has palazzos and the

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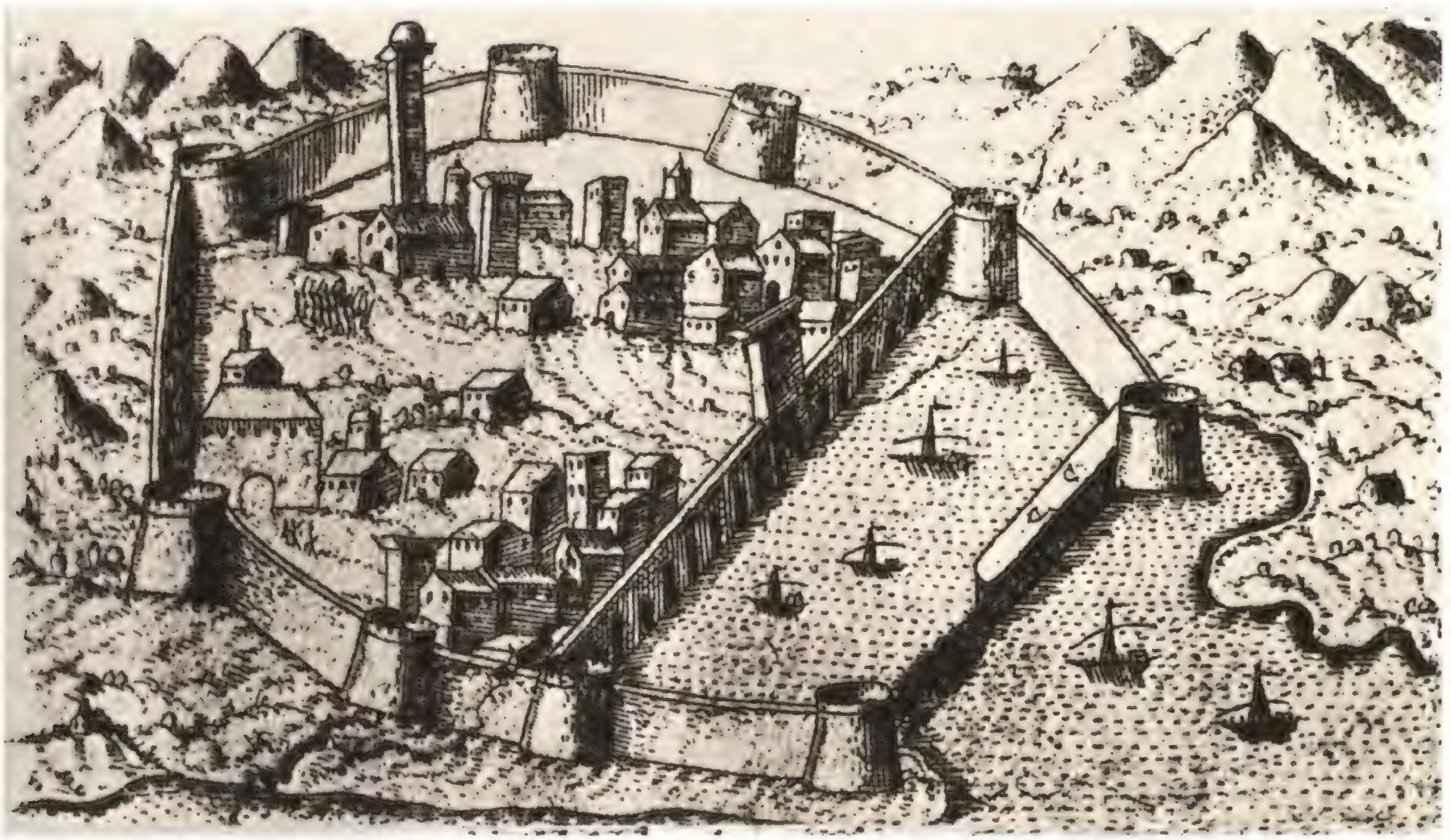
Writer DAVID DEVOSS is the editor and senior correspondent of the East-West News Service in Los Angeles, California. Photographer ENRICO FERORELLI is based in New York City.



DUBROVNIK (RAGUSA) A CLASSIC CITY-STATE BY FRANCIS W. CARTER, SEMINAR PRESS LTD. (LONDON) 1972

Soon after founding an outpost here in the seventh century A.D., settlers began erecting fortifications (this painting depicts the walled city in 1580). As early as the ninth century, the imposing battlements withstood a 15-month siege by the Saracens.

Rialto Bridge, but Dubrovnik is a functioning Renaissance city where people live in the houses and shop at the markets."

I FIRST CAME TO DUBROVNIK in 1999 as a visitor searching for an eye in the Balkan storm. Kosovo then was in flames; Belgrade under siege. Bosnia remained intact only by force of international fiat. I needed a respite from Sarajevo, where, working as a journalism instructor, I happened to live a mile from a mass grave. That devastated city was recovering from the war that had ended there only the previous year. But as I drove south from Sarajevo toward Dalmatia, Bosnia's once-fertile farmland offered only a succession of ghostly hamlets ethnically cleansed of inhabitants. Mostar, the last major stop before the Dinaric Alps, had been reduced to rubble. The Ottoman bridge that for centuries had spanned the Neretva River was destroyed, a casualty of the malignant xenophobia then infecting Bosnia and Herzegovina.

But as I traveled down the coastal highway beyond the mountains, the air began to warm, scenes of destruction grew less frequent and police actually began to smile. At the village of Ston, gateway to the Peljesac Peninsula, I entered the old, 530-square-mile Republic of Dubrovnik, which enjoyed an independent status for a millennium, to 1808. For the next hour, I meandered past fishing villages nestled beneath foothills verdant with vineyards. In the distance, an archipelago seemed to float in the mist. And then it appeared in the twilight: a walled city rising from the rocky coast like an Adriatic Camelot.

International restoration efforts have repaired much of the destruction sustained during Yugoslav army shelling in 1991-92. Says one resident: "Our damage, and our pain, as well, we have concealed."

DUBROVNIK WAS FOUNDED at the start of the seventh century amid the chaos that followed the fall of the Roman Empire. Its first residents were refugees from Epidaurus, a Roman settlement farther down the Adriatic coast that had been overrun by invaders. To escape, the Romans moved to a forested, stony island separated from the coast by a narrow channel. They called the settlement Ragusium, derived from a word for rock. Croats, invited to Dalmatia by the emperor Heraclius to help fight the barbarians, soon joined them. Their name for the town was Dubrovnik, from an old Slavic word for woodland.

It was a propitious location. Midway between Venice and the Mediterranean, the city—its name now shortened to Ragusa—also lay on the east-west axis between Catholic Rome and Orthodox Byzantium. Washed by the prevailing sirocco (south wind) that drives ships north toward Venice, it was a natural port of call. It also was the terminus of the caravan route from Constantinople. As trade increased, the city's strategic importance grew. For Renaissance popes, the Christian Republic of Ragusa proved a vital bulwark against advancing Islam. Ottoman sultans, on the other hand, viewed the town as a vital link to Mediterranean markets for their Balkan provinces.

Renaissance palaces, ecclesiastical treasuries and medieval libraries may be the city's most impressive attractions, but the soaring city wall is Dubrovnik's most imposing feature. Protected by two freestanding forts, the wall, more than a mile in circumference, surrounds the old city and contains five round towers, 12 quadrilateral forts, five bastions and two corner towers. The wall is a magnet for first-time visitors who, for the equivalent of $2 (15 kuna), can spend the entire day on the battlements gazing out on the Adriatic, peering down into convent cloisters or contemplating 1,400-foot Mount Srdj to the north while sipping cappuccino atop a crenellated turret.

After Venice's failed attempt to breach the walls in the tenth century, Dubrovnik was not seriously threatened again until 1806, when Russians and French fought over the city during the Napoleonic wars. The French finally commandeered it in 1808.

"Those stone balls aren't for cannon; they were made to drop on invaders," says Kate Bagoje, an art historian and secretary-conservator of the Friends of Dubrovnik Antiquities, a civic association that maintains the city walls. "And those slits in the wall," she adds, striding across a parapet on the fort of Lovrijenac, "were for pouring down hot oil."

Ironically, the strength of old Ragusa lay not in its ramparts but in the Rector's Palace; from here, the aristocracy governed their republic through a series of councils. Surrounded by greedy empires and quarrelsome city-states, the city leaders had two great fears: being occupied by a foreign power or dominated by a charismatic autocrat who might emerge from their own noble families. To ensure against the latter, they invested executive power in a rector who, unlike the Venetian doge, who was elected for life, could serve for only one month, during which time his peers kept him a virtual prisoner. Garbed in red silk and black velvet and attended by musicians and palace guards when his presence was required outside the palace, the rector was accorded tremendous respect. But at the end of the month, a member of another noble family unceremoniously replaced him.

Maintaining independence was a more challenging task. Save for a few salt deposits on the mainland at Ston, the tiny

MIRO KERNER

republic had no natural resources. Its population was not large enough to support a standing army. Ragusa solved the problem by turning its brightest sons into diplomats and regarding the paying of tribute as the price of survival.

Diplomacy was key. When Byzantium faltered in 1081 and Venice became a threat, Ragusa turned to the South-Italian Normans for protection. In 1358, after Hungary expelled Venice from the eastern Adriatic, Ragusa swore allegiance to the victors. But when the Ottoman Turks defeated Hungary at the battle of Mohacs in 1526, Ragusa persuaded the sultan in Constantinople to become its protector.

In 1571, the republic faced a dilemma, however, when the Turkish navy sailed into the eastern Mediterranean, captured Cyprus and began attacking Venetian possessions. The Holy League, consisting of Pope Pius V, Spain and Venice, responded by sending its fleet to meet the Turks off the Greek city of Lepanto. Both sides expected Ragusa's support, so—the story goes—the republic, exhibiting the kind of flexibility that would keep it independent for more than 1,000 years, sent emissaries to each. In the subsequent battle, the Holy League crushed Turkish naval power in the Mediterranean. But Ragusa had made sure it would be on the winning side—a status that would last until the republic lost its independence in 1808 to the French.

LOCATED BETWEEN THE BELL TOWER and steps leading up to the Jesuit College, Dubrovnik's Rector's Palace is the most beautiful example of secular Renaissance architecture in the eastern Adriatic. Now a museum, it was built in 1436 on the ruins of a medieval château, itself erected atop a Roman foundation. "Zagreb has commerce and politics, but Dubrovnik values art and culture," said curator Vedrana Gjukic Bender as she pointed out the artworks adorning the Rector's study. "This painting, the *Baptism of Christ* by Mihajlo Hamzic, commissioned in 1508, has never left the palace.

"There's a portrait of Saint Blaise," she continued, entering a second-floor reception area. "He is usually depicted with a wool-carding comb, because that's what the Roman governor Agricola used to flay him in the third century. He became our patron saint in 972, when, according to legend, he appeared in a dream to warn a local priest of an imminent attack by the Venetians. Believing this sign to be true, the authorities armed the citizenry, who repulsed the assault."

The nobility's greatest legacy, however, is not spiritual rectitude but a sense of civic propriety, vestiges of which are everywhere. Above the doorway linking the Rector's Palace with the building once used by the Grand Council is a carved inscription in Latin, which translates as "Forget private business, care for public affairs." In the central archway of the Sponza Palace, where a scale hung when the building was the customshouse and mint, is the declaration, "Our weights prohibit cheating and being cheated. When I weigh the merchandise, God himself weighs the merchandise with me."

By the 16th century, Ragusa had become one of Europe's leading city-states. Together with its eternal rival Venice, it was a major center of art, banking and culture. The city had 50 consulates positioned throughout Mediterranean Europe, Africa and the Near East. Its fleet of galleons and carracks was the third largest in the world behind those of Spain and the Netherlands. Many of the ships carried wool from Bulgaria, Serbian silver, or leather from Herzegovina. But some transported a more unusual cargo—religious relics, examples of which today can be seen in Dubrovnik's Cathedral of the Assumption of the Virgin. It contains one of the most remarkable reliquaries in Christendom.

"Each relic has a separate story," said 33-year-old art historian Vinicije Lupis, as he snapped open his briefcase, ceremonially extracted a pair of white cotton gloves and surveyed a room filled with jawbones, femurs, skulls and tibias encased in bejeweled golden containers. "That's the lower jaw of Saint Stephen of Hungary," he added, pointing to a wizened object on a platter. "Here, the left hand of Saint Blaise, given to Dubrovnik by Genoa."

Profits from trade were not all spent on relics. The aristocracy may have been grounded in feudalism, but it gave all children in its stratified society access to public schools. It provided health care, established one of Europe's first orphanages and, in 1416, when the slave trade was ongoing in the region, adopted antislavery laws.

Dubrovnik continues to benefit from civic improvements made centuries ago. Fresh water from a system of pipes installed in the Middle Ages still burbles from two fountains at either end of the main street of Stradun. Situated outside the eastern gate on the old caravan road to Bosnia, the 16th-century quarantine hospital built to prevent the spread of plague remains in such good condition that today it is used for art exhibitions.

From its beginning, Dubrovnik was a city of refuge and diversity. When the Spanish monarchy expelled Jews in 1492, many found new homes a few steps up from Stradun on Zudioska Street, where one of the oldest Sephardic synagogues in Europe is located. Serbs, too, were welcomed after their 1389 defeat at Kosovo Polje, much to the distress of the Turks.

Dubrovnik was not only a sanctuary for exiles but also a repository for Central European history. "The parchment and inks produced here have not faded in 800 years," said Stjepan Cosic, a 37-year-old research associate with the Institute for History and Science. "This paper is bright white because it contains no wood-pulp cellulose; it was made from cotton fabric. The inks, based on a mixture of iron, ashes and acorns, remain as vivid as the day they were put to paper."

ELIZABETH WOLF

Lying at a cultural crossroads (see map, opposite), Dubrovnik boasts a centuries-old affection for street life. The limestone-paved main thoroughfare, Stradun (site of the traditional sidewalk cafés) is closed to automobiles, as is the entire old city.

If history seems alive to Cosic, perhaps it's because he works in a 1526 waterfront palace with 18-foot ceilings, rooms filled with more than 100,000 manuscripts and a boathouse sized to accommodate a trading vessel. "Croatia is a small country with only 4,000,000 people. Dubrovnik's population is only 46,000. But the essence of our country's history and culture resides in Dubrovnik," he says.

For centuries, Ragusa survived plague, coexisted with Ottomans and kept papal intrigues at arm's length, but there was no escape from nature. On the Saturday before Easter in 1667, a massive earthquake reduced the city to rubble. Gone in an instant were most of the Gothic monasteries, the Romanesque cathedral and many of the Renaissance palaces. Towering waves poured in through an enormous fissure in the city wall, flooding a portion of the town, while fire ravaged what remained. Of the city's 6,000 residents, at least 3,500 were killed, many of them nobility.

The aristocracy rebuilt their city. A little more than a century later, at the close of the American Revolutionary War, Ragusan carracks even called at ports as distant as New York, Philadelphia and Baltimore. But the power of Mediterranean city-states was waning. Though Ragusa remained the capital of an independent republic for another quarter century, its thousand years of freedom ended in 1808, when Napoléon, moving inexorably eastward, annexed Dalmatia.

After the defeat of Napoléon, the Congress of Vienna incorporated Ragusa and the rest of Dalmatia into the Austro-Hungarian Empire, where it remained for a century. In June 1914, a young Serb nationalist, Gavrilo Princip, assassinated the heir to the Hapsburg throne, Archduke Franz Ferdinand, in Sarajevo. At the conclusion of World War I, Princip's dreams were realized when the Kingdom of Serbs, Croats and Slovenes—later renamed Yugoslavia—was created. After World War II, Yugoslavia became a communist republic under the leadership of Josip Broz, a Croat known as Tito.

THE BAROQUE CITY seen by visitors today features a few Renaissance buildings that predate the earthquake. But Dubrovnik's greatest treasure is its archive. In vaulted rooms on the second floor of the Sponza Palace are thousands of pristine, perfectly legible documents dating back more than eight centuries. "The Venice archives are exclusively political, but ours cover every aspect of life," said archivist Ante Soljic as he extracted a medieval dowry contract from a folder bound with velvet ribbon. "We have virtually the complete economic history of the republic, 1282 to 1815, seen through

real estate transactions, leasing agreements, customs documents and court records.

"We have records in Latin, Hebrew, Medieval Greek and Bosnian Cyrillic script," Soljic continued. "We also have more than 12,000 Turkish manuscripts, many of them beautiful works of art."

Not all of the city-state's history is readily accessible. A 1967 guide to Dubrovnik touts the Museum of the Socialist Revolution in the Sponza Palace, with exhibits on the history of Dubrovnik's Communist Party and Nazi persecution of Tito's Partisan army. Today, one looks in vain for that museum. The receptionist at the palace hasn't heard of it. Only Ivo Dabelic, Dubrovnik's curator of recent history, knows the location of Dalmatia's revolutionary past. And he's glad somebody asked him where it is.

"Don't worry, the exhibits are safe," he said when we met at Luza Square. "Just follow me." Crossing the square to the Rector's Palace, Dabelic entered a room where a portion of the wall sprang open, revealing a hidden cupboard. "Ah, here it is," he said, removing a large iron key. We made our way back to a wooden door at the palace's rear. "The Socialist museum was closed in 1988; we intended to display the items in a lending library," Dabelic said as we inched down a stairway. "But when the [Serbian] Yugoslav army began shelling the city in 1991, things got very confused.

"There they are," he said, shining a flashlight on a stack of wooden boxes set in the middle of a subterranean cell. "All the helmets, photos and documents of the socialist era," he said. "Dubrovnik has the resources for a museum of contemporary history, but the city prefers to spend its money on the Summer Festival."

Until well into 1992, the Yugoslav army pounded Dubrovnik with artillery. By the time the shelling stopped, 382 residential, 19 religious and 10 public buildings were seriously damaged, along with 70 percent of the city's roofs. The lives of 92 people were also lost.

"There were banners all over the city proclaiming Dubrovnik a World Heritage Site under protection of UNESCO, but they were ignored," recalled Berta Dragicevic, executive secretary of the Inter University Center. "The archives were saved, but 30,000 books, many irreplaceable, were reduced to ashes."

Today, extensive restorations have been completed. The city's bas-relief friezes, lancet windows and terra-cotta roofs largely have been repaired, but much work remains. "Progress is slow because we're using construction techniques that are centuries old," said Matko Vetma, the director of a private company restoring the city's 14th-century Franciscan monastery. "The stonecutters who are replacing the rose windows in the cloister possess the skills of Renaissance artisans." Fortunately, the workers are not limited to

The Sponza Palace (where calligrapher Ivan Pale, in Renaissance garb, inscribes souvenir certificates reproducing 18th-century credentials carried by Dubrovnik's diplomats) is one of a handful of structures that survived a massive earthquake in 1667.

Grisly glory: relics (fragments of leg, skull and hand, encased in gold and jewels, are said to be remains of the city's patron saint, Blaise, shown in a 14th-century painting, opposite) attest to wealth amassed by trade in goods from wines to woolens.

Seaside quays radiate out from the city, to which tourists are beginning to return. Dubrovnik increased in popularity as a glitzy getaway in the pre-World War II years—particularly after Edward VIII and divorcée Wallis Simpson holidayed there in 1936.

Renaissance materials. "We're reinforcing the walls with steel beams and epoxy," Vetma added. "At least the friars won't have to worry as much about earthquakes in the future."

Dubrovnik today spends 20 percent of its budget on culture. During the Summer Festival in July and August, the entire walled city becomes an open-air stage. Plays, concerts and folk dances are performed at 30 venues, including intimate market squares, the foyers of Renaissance palaces and the ramparts of medieval fortifications.

"Performing in the open air is different than inside a small theater," said 76-year-old Mise Martinovic, the dean of Dubrovnik actors. "There are silent nights when the air is dead calm. And nights when electricity from an approaching storm makes your hair tingle.

"I remember when Marshal Tito and the King of Greece came to see *Hamlet* and remained seated during a violent storm," Martinovic reminisced. "It was pouring rain; one by one the stage lights began to explode. But they never moved."

After a final glance at the fortress of Lovrijenac, Martinovic finished his coffee and rose to resume his morning walk. "Dubrovnik is haunted by invisible forces from the past," he mused. "On a silent night you almost can hear the ghosts. There is magic in this city." ○

GETTING THERE

With war damage repaired and a Mediterranean climate, Dubrovnik is a year-round destination. Delta Air Lines has round-trips through Croatia Airlines. Call the Croatian National Tourist office (800-829-4416) for details.

INSIDE TIP: An impressive engineering feat, the Medieval wall crossing the Peljesac Peninsula at Ston protected the town's valuable salt pans from invaders.

CHOICE COLLECTIBLE: The peninsula is famous for its wines, including Plavac Mali (red) and Posip (white). Croatian-born California winemaker Miljenko Grgic recently began production in the area, joining locally renowned wineries such as Dingac and Frano Milos.

FOR THE GOURMET: Seafood is practically still swimming at restaurants around Gundulic Square. For a treat, try the calamari at Kamenice.

YOU SHOULD KNOW: Though Serbo-Croatian is what many English speakers call the language spoken in Croatia and other parts of the former Yugoslavia, in Croatia it is simply called Croatian, or Hrvatski.

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Lucky (above with his father, Clyde, in Florida) is the first whooping crane in 63 years to fledge in the wild in the United States.

Making Whoopee

What do you call it when a pair of rare whooping cranes mate, nest and rear a chick in your backyard? Lucky ~ BY CRAIG PITTMAN

THE BACK PORCH of Gene and Tina Tindell's modest one-story house in central Florida overlooks a shallow lake the size of several football fields. Dyches Lake is virtually indistinguishable from thousands of others like it that pockmark the midsection of the Sunshine State. But this lake is far from usual: last spring it became the setting for one of the grandest—and rarest—shows in nature. Amid the mud holes and reeds, a pair of whooping cranes mated, built a nest, hatched a chick and taught it to fly. From their front-row seats—most often at a picnic table on their screened-in porch—the Tindells had witnessed something nobody in the United States has seen for the past 63 years.

"The mating was the highlight," says Gene Tindell in the soft twang of his native Alabama. "They got out there one afternoon and started hollering and spreading their wings. They jumped up in the air and pranced around. I'd have given anything if I'd had a video of that."

At 66, Gene is a rangy man with a graying mustache who often dresses in faded jeans and a pair of scuffed sneakers. A lifetime of deer hunting and bass fishing has lent his voice and movements a quiet economy. After he retired in 2001 from a job supervising Florida prison inmates in a work program, he's filled his time by watching his "whoopers" on the lake. As a result, says Marty Folk, a crane expert with the Florida Fish and Wildlife Conservation Commission (FWC), Gene Tindell has become an authority on the behavior of the world's rarest crane, *Grus americana*, only 415 of which exist today.

Gene's wife, Tina, also knows her cranes. For most of the past year, she came home from her job at a local paving-contractor company to eat lunch and join her husband with a pair

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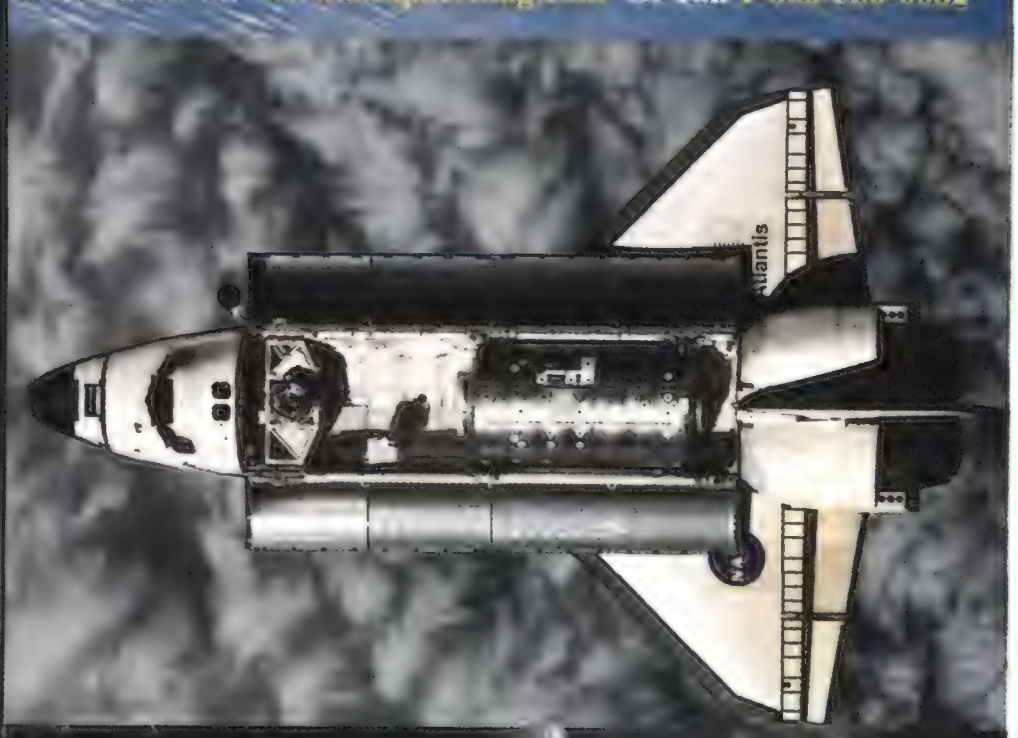

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of binoculars. She developed such maternal feelings for the whooping crane chick, which she named Lucky, that a relative sent her a card reading: "To Welcome Your New Arrival."

The Tindells live under the shade of spreading oaks, just off Main Street in Leesburg, a town of about 16,000 an hour's drive north of Tampa. This is no wilderness: an occasional ambulance screams past and the local orange juice plant sounds a loud whistle at noon. The cranes, foraging for worms and bugs, don't seem to mind.

A narrow paved road runs by the lake. Gene says that the cranes "have done more to slow down traffic on that road than any speed limit sign." Rubbernecking is understandable. Fully grown, a whooping crane stands, on spindly black legs, up to five feet tall, making it the tallest bird in North America. The feathers covering its body are pure white, while its huge wings are tipped with black. To top it all off, a mature crane sports a bright red crown, as if the bird wears a jaunty beret. Its beak is as sharp as a javelin, and its eyes are yellow, lending its gaze a cool, seemingly pitiless air.

Gene and Tina Tindell became experts on whooping crane behavior after Bonnie and Clyde "started hollering and spreading their wings" before creating Lucky (nearest lake, above, and spreading his wings, below) behind the Tindells' house.

Whooping cranes once ranged across the United States, Canada and Mexico, but by the Civil War fewer than 1,400 remained. As settlers moved across the country and up and down the East Coast, they drained native marshes and shot the birds for sport. In 1939, a nonmigratory flock of 13, including two juveniles, was spotted in a Louisiana swamp, but a hurricane nearly wiped them out a year later. Those juveniles were believed to be the last U.S. whooping cranes born in the wild—until humans intervened.

In 1947, Robert Allen, an ornithologist with the Audubon Society, began searching for the last whooping crane breeding ground in Canada. Eight years later, he finally located the nests in a remote area of the Wood Buffalo National Park in northern Alberta. Starting in the late 1960s, biologists selectively removed single eggs from the Canadian nests (cranes usually have two eggs), incubated them and began raising the birds in captivity. In 1993, the FWC released 14 captive-reared birds on a former cattle ranch not far from Orlando, Florida. Since then, more than 250 have been turned loose in Florida, but a combination of drought and predators—particularly bobcats—has thwarted the cranes' efforts to reproduce. Then the Tindells got Lucky.

Lucky's parents were born in April 1998 at the Patuxent Wildlife Research Center in Maryland. Biologists, dressed in crane costumes so that the birds would not become overly familiar with humans, hand reared the birds. After eight months, the cranes were shipped south to Florida and released in January 1999 near the village of Okahumpka. Just before Christmas 2001, they circled over the Tindells' lake and decided to call it home.

Gene figures the pair stopped to eat the cracked corn that he regularly puts out for mallard ducks. Tina nicknamed the corn-stealing cranes Bonnie and Clyde. State biologists set up a surveillance camera on a post behind the Tindells' house. Right away, the Tindells felt responsible for the cranes' welfare. When some local dogs got loose one day and started to harass the cranes, Gene ran out and chased them away.

In February, Bonnie laid two eggs. The first one hatched on March 12. The second chick hatched two days later but didn't live long enough to get a name. A bald eagle, which frequently perched on a dead tree near the lake, noticed that Bonnie and Clyde had strayed from the nest, leaving the newborn chick unprotected.

"That eagle swooped down and picked him up before you could blink an eye," says Gene. But when the eagle came back for the other chick, Bonnie was able to spread her wings and cover her offspring while Clyde jumped up at the eagle and scared it away. That's when Tina named the chick Lucky.

CRAIG PITTMAN writes on environmental issues for the St. Petersburg Times.

BUD LEE; MARESA PRYOR / LIGHTWAVE PHOTOGRAPHY

At first Lucky was just a rust-colored runt, no bigger than a tennis ball. But by the time he was a month old, he was the size of a chicken.

State officials tried to keep the news about Lucky's birth out of the papers. But there are no secrets in a small town, and soon so-called craniacs poured into Leesburg, rushing by the roadside watermelon stands, the golf cart supply store and the House of Bargains on their way through town to the Tindells' house. Bird-watchers came from Michigan, and photographers from as far away as France. Unfailingly polite, Gene answered everybody's questions and even let strangers pet his pug, Beau. He raised his voice only once, when a birder tried to wade out into the lake for a closer look at the cranes.

Soon the cranes felt comfortable enough to wander within 30 feet of the house. But in May there was a second incident with eagles. A pair of them swooped down near the nest, and Lucky's parents went after them, injuring one eagle so badly that Gene had to rescue it. (The eagle spent two weeks in rehabilitation before being released.) Lucky wouldn't be safe from predators until he learned how to fly.

By then, Lucky's legs were long like his parents', and his feathers were turning from soft brown to brilliant white. Whenever a breeze kicked up, Bonnie and Clyde would flap their wings and chase Lucky until he ran and flapped his wings too. But he didn't take off.

It wasn't until a sunny, slightly windy afternoon in early June (Gene happened to be sitting in his backyard with a couple of photographers) that Lucky got the hang of it. Marty Folk and another state biologist had given up on Lucky flying that day and gone home. Half an hour after the biologists left, Lucky and his parents simply flapped their wings and flew across the lake.

"We all just sat there and watched, and nobody took a single picture," said Gene. "We were dumbfounded." As for Lucky, "I think it surprised him more than anybody."

Lucky's flight marks a milestone in the history of humans' efforts to save whooping cranes. Lucky's success, says Folk, demonstrates that captive-reared cranes released into the wild "are capable of doing everything it takes to reproduce themselves—form pair bonds, lay eggs, hatch the eggs and rear a chick to fledging."

In early August, the young family settled into a pasture a mile away from the Tindells'. Gene would drive over to the pasture and watch them through binoculars. In November, the birds started coming back to the lake to forage for food. Gene and Tina have resumed the routine of watching their whoopers from the screened porch.

Soon Lucky will be old enough to leave his parents, find a mate of his own and hatch a new generation—if we're lucky. ○

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Honky-Tonk Poet

Fifty years after his death at 29, the music world still marvels at Hank Williams' homespun hits ~ BY GEOFF BOUCHER

NEW YEAR'S EVE, 1952. The Cadillac and its hired driver were waiting in the frosty Tennessee night when the hotel porters guided an ailing Hank Williams into the backseat. He was on his way to yet another show in yet another state, but he was in ragged shape, battered by the bottle and sedatives and heartache. He was painfully skinny, and his angular face looked far older than his 29 years. It was about 10:45 p.m. when they closed the sedan door in Knoxville. When they opened it the next morning, in Oak Hill, West Virginia, the year was 1953 and the greatest country singer of them all was blue and cold, his spirit long gone on the dark highway.

The exact moment of Williams' passing is, like his music, a lonely brand of mystery. The paperwork tells us he died 50 years ago this month in Oak Hill and the cause of death was a heart condition. All of that, though, is about as solid as the snow that fell past the headlights that night. What is certain is the unmatched resonance of the Hank Williams songbook, a collection whose echoes can still be heard not only in today's country music but also in rock, folk, rockabilly, blues and pop. The impact is all the more impressive because the man's career was so brief: his breakthrough hit, a reworking of "Lovesick Blues," was released in 1949, and his last recording session was only three years later.

Williams' original songs, such as "Hey, Good Lookin'," "Cold, Cold Heart," "Your Cheatin' Heart," "I Can't Help It (If I'm Still in Love With You)," "Move It on Over," "Long Gone Lonesome Blues," "Honky Tonkin'" and "(I Heard That) Lonesome Whistle," defined the elemental sound of country music. They also made the sickly kid from Alabama a superstar, a pioneering crossover artist who delivered regional "old timey" music to mainstream America with a staggering 37 Top 10 hits.

From "Jambalaya" to "Your Cheatin' Heart," the songs of Hank Williams (right, c. 1950) sound fresh today.

"Hank is generally considered the greatest songwriter in the history of country music," says John Rumble, senior historian for the Country Music Hall of Fame in Nashville, Tennessee. Williams' songs endure because of their candor, their appeal to universal emotions and their rustic, Bible-tinged Southern flavor. He may have looked like other Grand Ole Opry stars in his crisp, fancy western wear, but his songs were often hand-drawn maps of despair.

"It was the honesty, that's what set Hank apart and why people still listen to his music," says country singer Ray Price, who was a roommate of Williams' and one of his best friends. "His music wasn't over anybody's head," Price adds. "He was one of the people. And they loved him for it." In a 1951 interview, Williams spoke of his "folk music," saying, "I like to think that folk songs express the dreams and prayers and hopes of working people."

Willie Nelson, the songwriter and country singer, always performs a Hank Williams song or two or three, and he says the beauty of them is their simplicity, "just a voice and a guitar and a lot of great words."

A Hank Williams song, embroidered by his sometimes joyful, sometimes haunting yodel, is a model of rustic po-

GRAND OLE OPRY ARCHIVES (2)

Hank Williams (standing second from right, next to first wife Audrey Williams) and his Drifting Cowboys (from left, Doyle Turner, Bernice Turner, announcer Bill Smith and Bill Taylor, in the 1940s) won radio fans with Williams' "vanilla" hillbilly music.

etry, as in the lyrics of his 1949 recording, "I'm So Lonesome I Could Cry":

Hear that lonesome whippoorwill
He sounds too blue to fly
The midnight train is whining low
I'm so lonesome I could cry

I've never seen a night so long
When time goes crawling by
The moon just went behind a cloud
To hide its face and cry

When Williams was buried in Montgomery, Alabama, an estimated 25,000 people showed up for the funeral. "It was incredible," says Kris Kristofferson, the singer-songwriter (and movie actor) who was a teenage Williams fan in distant California when his idol died. "The reason all those people came was the same reason I have sung his songs my whole life. He moved people to their soul. And when he died, all those people—people in the South, outsiders, the poor people, the losers, the heartbroken folks—everyone who identified with him, they took it hard. They felt like they had lost a guy who had been on their side."

Hank Williams' music was the sound of Saturday night staggering into Sunday morning, a lonesome shuffle between the roadhouse bar stool and the church pew. He learned how to perform for a crowd and drink by himself in the "blood buckets"—rough Alabama honky-tonks—but the Bible he loved as a boy is where he got his rhythms. On the radio shows that would make him famous, in fact, Williams always performed at least one hymn, and the spirituals he wrote, such as the mesmerizing "I Saw the Light," are often overlooked.

"There are Baptist churches all over the country that have Hank Williams-penned songs being sung right now," says *New York Times* reporter Rick Bragg, author of Grammy-nominated liner notes for a 1999 Hank Williams CD collection. "I guess Hank had as much claim on God as anybody, maybe more so than some."

Bragg, an Alabama native, says Williams was as wounded and spiritual as the region that created him: "They were sad times. We went from Reconstruction to the Depression to World War II to Korea, to Vietnam, to the pain of the civil rights era. What he did was he spread that pain out enough that we could stand it."

GEOFF BOUCHER covers music and the music industry for the Los Angeles Times.

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HE WAS BORN Hiram King Williams, a name inspired by Scripture, in Mount Olive West, Alabama, on September 17, 1923, the second child of Elonzo H. Williams and Jessie Lillybelle Skipper Williams. He had a birth defect, a mild form of spina bifida, which would cause him back pain his whole life, and was a rather sickly child. The boy's father had fought in World War I and returned to work in logging camps and strawberry fields, but by 1930 his health was failing. When Hank was 6, his father was taken to a veteran's hospital in Louisiana with partial paralysis and a diagnosis of dementia. Hank sold peanuts and shined shoes to help the family.

Years later, Hank would say his first memory was watching his mother play the organ. Religion, too, impressed him early. As the story goes, "he would tell his mother, 'Get that Bible in this bed,' and he would fall asleep with it," says Kira Florita, coauthor of a biographical scrapbook, *Hank Williams: Snapshots from the Lost Highway*. The boy marveled at the music floating through the humid air from the local black churches. His mother, a resourceful if severe woman, gave 8-year-old Hank a second-hand guitar that, according to one account, she had bought for $3.50, a considerable sum for a woman who earned about 25 cents a day as a seamstress and nurse. He didn't go past the ninth grade, quitting after his 16th birthday.

Hank learned to play the guitar from a bluesman named Rufus Payne, also known as Tee-Tot. Payne and two other black men, one playing a bass fashioned from a broom and tub, were buskers, or street performers. Payne had in young Williams an unofficial protégé who would not be deterred, no matter how the wandering musician, weary of the boy's ceaseless questions, tried to put him off. "All the musical training I ever had," Williams would say later, came from Payne.

In his mid-teens, he won a number of local talent shows—acing contests with his own composition, "WPA Blues," after the Works Progress Administration—and formed a band,

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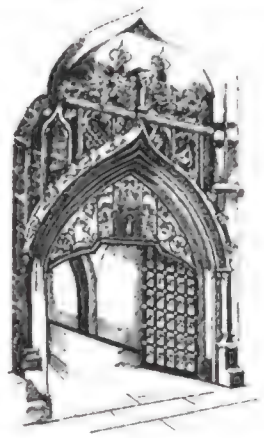

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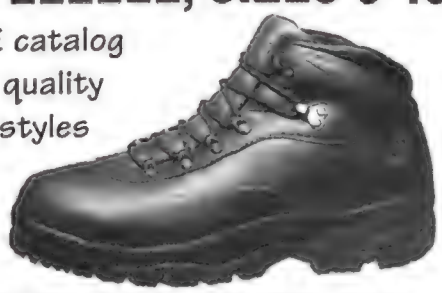

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soon to be called the Drifting Cowboys. The name reflected the influence of singing cowboy Gene Autry and other stars of "Hillbilly Hollywood," but it was the rough-hewn blues that Williams had learned from Payne, along with songs by Grand Ole Opry star Roy Acuff, that shaped the young musician's sensibility.

Williams became a regional favorite on radio and in traveling shows and, after a wartime detour as a welder, was in Alabama in 1943 performing with a touring medicine show. There he met his future wife, an aspiring singer, who spurred his career and gave him plenty of anguish to draw on. The painful candor of his later hits "House Without Love" and "Why Should We Try Anymore" are believed to reflect his stormy marriage to Audrey Sheppard Guy.

They met in Banks, Alabama, and Audrey seemed an unlikely candidate for Hank's affections: she was married, had a 2-year-old daughter and reportedly dreaded Williams' drinking. In a 1973 interview, though, she recalled the potential that drew her to him. "If some woman, equally as strong as I am, had not come along, there would never have been a Hank Williams. He did not want to live when I met him. He was an alcoholic." The first time the singer took his new girlfriend home, Hank and his mother "fought like men would fight," Audrey recalled, over the new romance. The screaming match prefigured a tension between Audrey and Hank's mother that would dominate much of his remaining life.

In December of 1944, a justice of the peace who owned a local gas station presided at Hank and Audrey's marriage ceremony near Andalusia, Alabama. The singer was 21. If his mother and wife bedeviled young Hank, they also pushed him to fulfill his promise.

The other shaping force in Williams' career was Fred Rose, the Nashville songsmith who owned Acuff-Rose Publishing with Williams' hero, Roy Acuff. Audrey set up a meeting with Rose, who became Williams' manager, producer, song-

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writing collaborator—and goad. "Hank, anything I've written you or said is for your own good," Rose wrote in a 1948 letter to the singer, "as I know what a fool a man can make of himself with drinking."

Those years were pivotal, with Hank's recording "Move It on Over" establishing his reputation in 1947, and his live performances on the "Louisiana Hayride," a Shreveport radio show broadcast throughout the South, fueling his rise in 1948. Despite binges and a volatile marriage, Williams was living a dream in Nashville by the middle of 1949, performing on the "Grand Ole Opry." His hit recording of "Lovesick Blues" held the number one spot on the U.S. country music charts for an astonishing 16 weeks. Williams and the Drifting Cowboys commanded $1,000 a performance and upstaged even Bob Hope when they shared a bill with him in a caravan show.

Williams was an electrifying performer—sober. "I remember one night in Richmond when he was pretty well lit up," says Price. "We got him offstage before it got too bad." The next night, Price goes on, "the place was packed to see what he would do. And he was amazing." At a time when Elvis Presley was a schoolboy, Williams gyrated suggestively onstage and flashed dark, flirtatious eyes. Women screamed his name and scuffled for his attention. "He was the first man to move," Oscar Davis, the concert promoter, once said. "He'd move sexually, and the women would love him."

Williams marveled at the adoration. "I've been to some places where it's impossible to walk across the stage without having the major portion of my outfit torn off," he said in a 1951 interview. "They even grab fistfuls of hair. When you get to be a success, folks have a habit of writing you and telling you their troubles. If their husband dies and they're left with eight starving kids, they write. If their sweetheart done them wrong, they write. If they feel sorta blue, they write. I dunno, I reckon they think I'm something like the Red Cross."

But he had plenty of his own trou-

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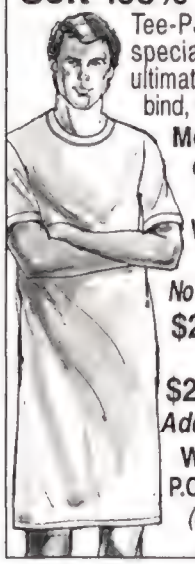
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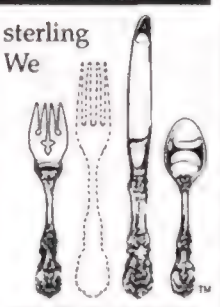
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bles. By 1951, his back was causing severe pain, despite surgery and the steel braces he wore, and he was drinking so heavily that his handlers checked him into a sanatorium in Madison, Tennessee, where he was confined to a cabin with barred windows that he called "the hut." His marriage collapsing, he said in a divorce filing in 1952 that he had "suffered every humiliation, abuse and mistreatment that a man could possibly take from a woman." For her part, Audrey said he was an abusive drunk. As Ray Price remembers it, Williams' split with Audrey left him reeling: "The strange thing is he told me that he told her, 'If you don't take me back, I won't make it a year.' And he told her one year to the day before he died."

In August 1952, the "Grand Ole Opry" fired Williams for missing performances and behaving erratically, and he returned to the "Louisiana Hayride," making yet another hit with "Jambalaya." He married again, to Billie Jean Jones Eshliman, but was pining for Audrey, to hear Price tell it. "He was so torn up you never got to see him be himself," Price recalls. In October, Williams hired a quack personal physician—a parolee with a "medical license" from a traveling salesman—who gave Williams prescriptions for chloral hydrate tablets, saying the powerful sedative would help him overcome his drinking problem.

The circumstances of Williams' death are the stuff of legend. But he is known to have received morphine shots that day from a Knoxville physician, supposedly to ease chronic hiccups, and Colin Escott, author of the 1994 book *Hank Williams: The Biography*, concludes the artist "died from the combined effects of alcohol, an undetermined number of morphine shots, and chloral hydrate."

The music, of course, is what matters now. Williams, with Rose, was supremely successful at crafting a signature sound that was more tradition-bound than that of other country superstars, such as Red Foley or Eddy Arnold. "The high steel guitar of Don Helms—that was something Fred Rose

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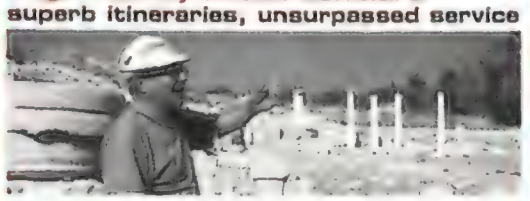
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insisted on, to cut through the noise of beer joints and taverns where Hank Williams' music was played on the jukebox," Rumble says.

As with most country acts of the day, there were no drums, but the sock rhythm guitar and other accompaniment laid down a percussive sound as basic as a heartbeat. "Hank instinctively knew that he had to keep things simple, to be 'vanilla,' as he called it," Rumble says. "He didn't let his guitarists get too intricate or too complex. It was really simple to create a rhythmic platform for his lyrics. In country, the lyrics are always out front. Country music is storytelling."

While most country singers relied on others' storytelling, Williams saw himself as a songwriter first and singer second. No matter that he never learned to read music. His talents went beyond honky-tonk, as became evident when Tony Bennett recorded "Cold, Cold Heart" in 1951, which solidified Williams' reputation as a great American songwriter, period. His songs would be recorded by scores of artists of all musical stripes, from Johnny Cash to Louis Armstrong, Rosemary Clooney to the Grateful Dead, and Henry Mancini to the Bee Gees.

Perhaps more telling of his legacy, Williams appears as sort of a mystical presence in numerous songs by other artists, including Lou Reed. "We all wanted to sing with him, but instead we sing *about* him," Kristofferson says. "He was maybe the best white soul singer ever, you could say, and there is something a little magic about him."

Williams remains deeply influential and much celebrated five decades after his death. "He was a wonderful songwriter, but it was very simple in what it was," says Willie Nelson. "The songwriter Harlan Howard used to say a great song is three chords and the truth—and that's pretty much Hank Williams." When Nelson plays "Jambalaya" or "Move It on Over" in concert, he says the music affects young fans "the same way it affects me."

In 1961, Williams was among the inaugural class of inductees into the

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Country Music Hall of Fame and was elected to the Rock and Roll Hall of Fame in 1987, even though he died before the genre barely existed. *Life* magazine declared in 1994 that he was the most important performer in country music history.

He had one child with his first wife: Hank Williams, Jr., who was 3 when his father died and became a country music singer, performing his father's music for years. The son then moved into his own as an artist, incorporating a rock sensibility and joining the "outlaw" country movement, a reaction against slick Nashville productions. Now 53, he may be best known for his role as official theme-singer for *Monday Night Football*. Hank Williams' second child, born to Bobbie Jett five days after he died, is Jett Williams. A country music performer since 1989, she has recorded three albums and written a 1990 autobiography, *Ain't Nothin' as Sweet as My Baby*.

Grandson Hank Williams III is also in the family trade, playing country music and a hybrid he calls "punkabilly." Critics have given him favorable reviews, and the rail-thin guitarist, whose second solo album is 2002's *Lovesick, Broke & Driftin'*, is said to look and act a lot like Hank Sr. Only 30, he has already outsurvived a grandfather as tragic as he was gifted.

Out on the Interstate between Montgomery and Birmingham, a sign saying Lost Highway pays tribute to the gawky Alabama boy who grew up to be arguably the most influential practitioner of an indigenous American art form. The man seemed to expect that the road he traveled was not going to be a long one. The last song released in his lifetime was a lament with the tragicomic title "I'll Never Get Out of This World Alive." On the floor of the Cadillac in which he died was a piece of paper with lyrics to another song, several cryptic, elegiac lines ending:

"Tonight we both are all alone
and here's all that I can say
I love you still and always will
But that's the price we have to pay." ○

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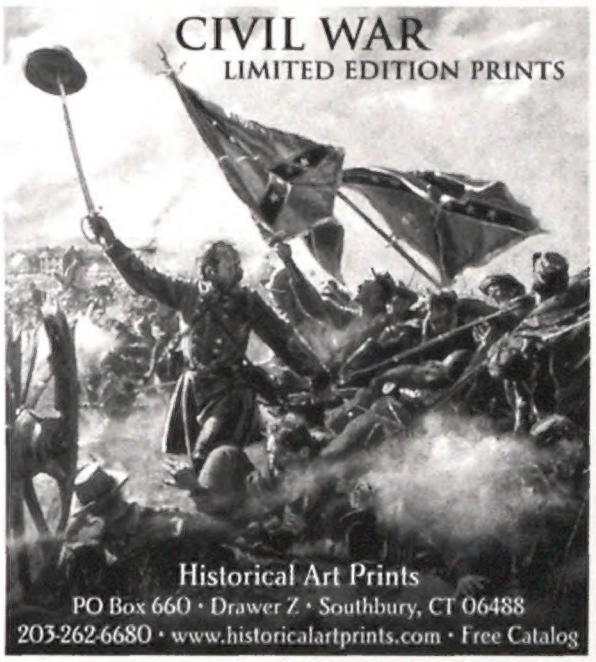
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The Twin Towers fall.
Sorrow, anger and pride rise
up from the ashes.

Soaring Angels prove
in spite of the strength of Bonds
Giants sometimes fall.

Wellstone departs so
suddenly. Dems rally but
Mondale not the Norm.

GOP poll vaults
over midterm elections,
showing Dems da brakes.

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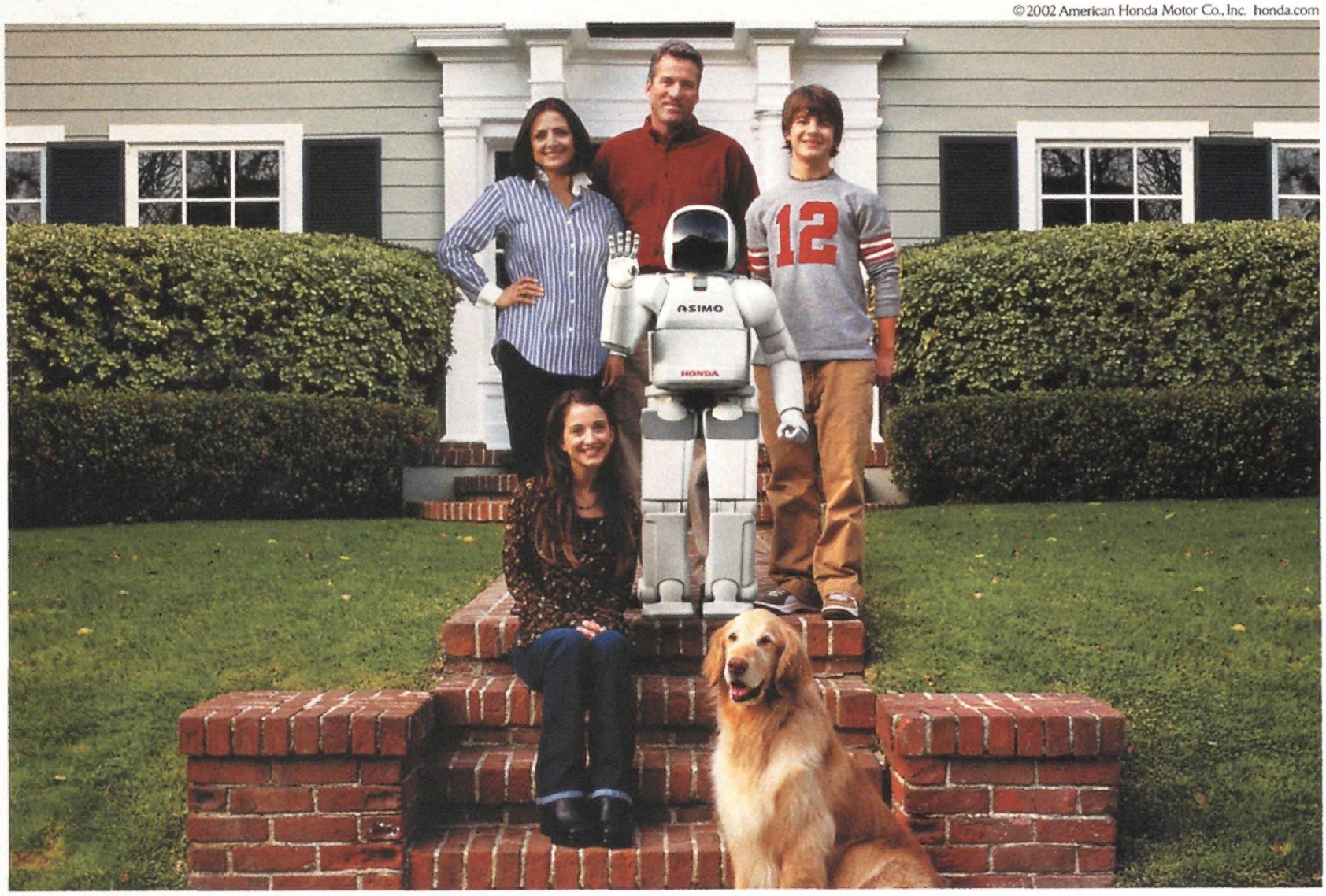

We're building a dream, one robot at a time.

The dream was simple. Design a robot that, one day, could duplicate the complexities of human motion and actually help people. An easy task? Hardly. But after more than 15 years of research and development, the result is ASIMO, an advanced robot with unprecedented human-like abilities. ASIMO walks forward and backward, turns corners, and goes up and down stairs with ease. All with a remarkable sense of strength and balance.

The future of this exciting technology is even more promising. ASIMO has the potential to respond to simple voice commands, recognize faces, carry loads and even push wheeled objects. This means that, one day, ASIMO could be quite useful in some very important tasks. Like assisting the elderly, and even helping with household chores. In essence, ASIMO might serve as another set of eyes, ears and legs for all kinds of people in need.

All of this represents the steps we're taking to develop products that make our world a better place. And in ASIMO's case, it's a giant step in the right direction.

HONDA

The power of dreams.™